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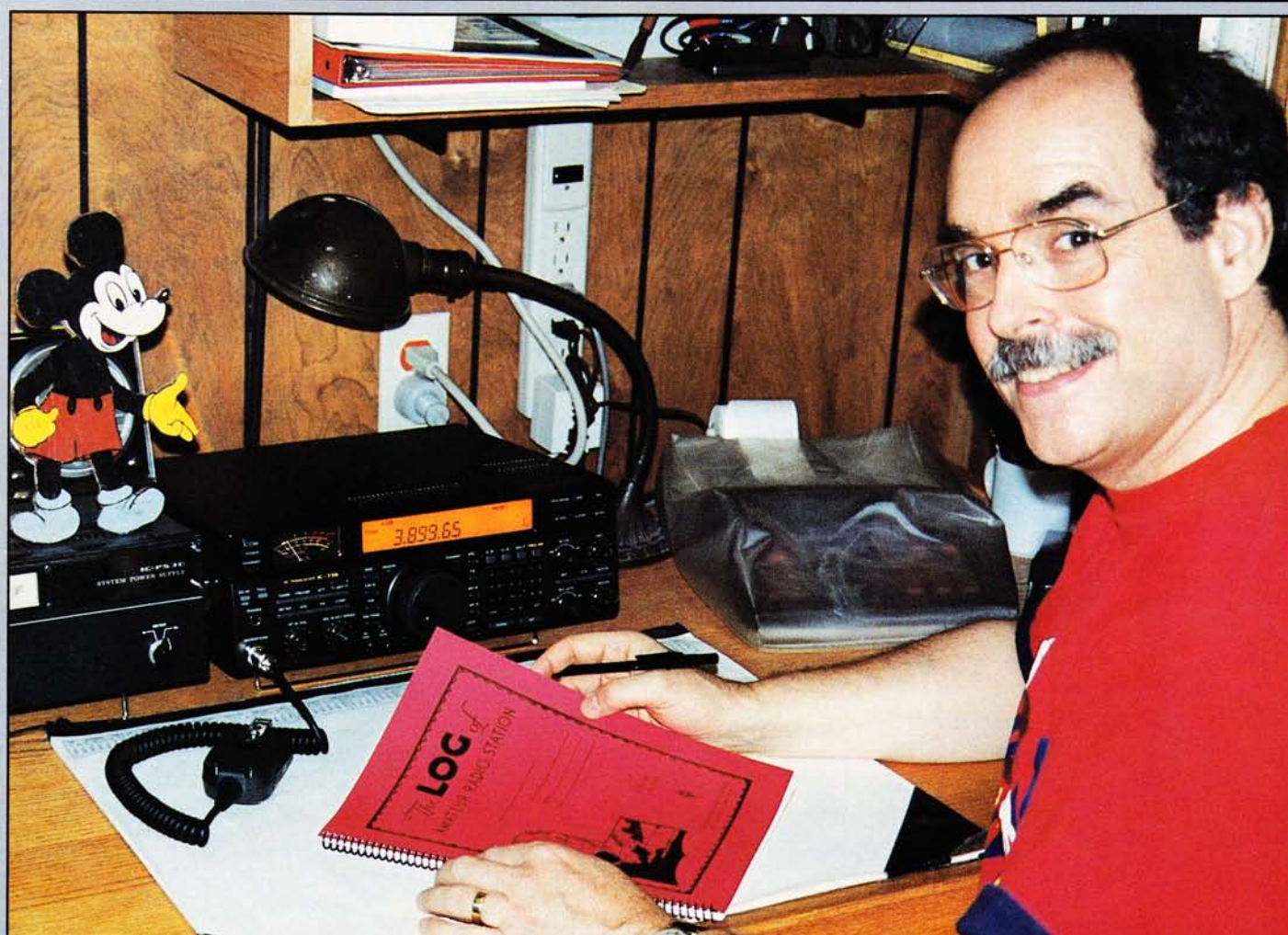
QCWA JOURNAL

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Fall - 1995

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Fall - 1995

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Volume XLIV, Number 3

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From the Editor:

The first thing I have to do is to apologize to Judge Ito out in California for our oversight last issue. For those that missed the error - in a Chapter Report he was described as "infamous" where famous would have been the correct term. We're sorry that slipped through.

This issue which should have been in the mail September 1 will probably be a few days late. However, we'll be back on schedule with the Winter Issue; it will go in the mail December 1. I'd like to remind all contributors to have their copy in by November 1. Everything but article manuscripts should go to Headquarters. Those of you with computers and modems can upload your material to the QCWA BBS at Headquarters. I can then download it directly into my computer. A couple of the regular contributors have started doing this and it works out very well.

Most of the material contained in this issue is from the membership. I think this is the way it should be and the way it will be in the future. I encourage everyone to become involved in the Journal. Not only do we need articles of interest to the membership but we can always use old historic photos to brighten our pages. And your input is always welcome. Please let us know how you feel about what we're doing.

The December issue will be the biggest - and hopefully the best issue yet. Until then, 73 *N6CSW*

Cover: Gene Williamson, K7DBV, operating W2MM (W2 'Mickey Mouse'), the QCWA club station located at QCWA Headquarters in Eugene, Oregon. More on Gene and the station in the General Manager's report on page 4. Photo by W7LVN.

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Earl R. Thomas, W2MM (SK)	1965 - 1968
Clarence Seid, W2KW	1969 - 1971
Barry Goldwater, K7UGA	1972 - 1973
Frank A. Gunther, W2ALS	1974 - 1977
Harry S. Gartsman, W6ATC	1978 - 1981
Stuart Meyer, W2GHK (SK)	1982 - 1985
Leland Smith, W5KL	1986 - 1989
Harry Dannals, W2HD	1989 - 1994

Executive Secretary/General Manager

Ralph Barber, W2ZM (SK)	1955 - 1964
Gus Gironda, W2JE (SK)	1965 - 1973
Ethel Smith, K4LMB	1974 - 1976
Ted Heithecker, W5EJ (SK)	1976 - 1991

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Subscription to the JOURNAL for nonmembers in the US is available for \$15 per year. Contact the business office for subscription information. The JOURNAL is available free to blind and physically handicapped paid-up members on audio cassette tape. For more information, contact Blanche Randles, W4GXZ, (May 1-October 1) HCR-32 Box 591, Stoddard, NH 03464, 603-446-3492; (October 1-May 1), 6002 N. Fremont, Tampa, FL 33604, 813-870-0867.

The Quarter Century Wireless Association, Inc. was founded December 5, 1947, as a noncommercial association of radio amateurs organized for the promotion of interest in Amateur Radio communication and experimentation, for the establishment and advancement of the radio art and of the public welfare. QCWA is an incorporated association without capital stock chartered under the laws of the State of New York, and is a tax exempt 501(C)3 organization under the Internal Revenue Code of 1986. Its affairs are governed by a President, Vice President, Secretary, Treasurer and a Board of Directors, whose voting members are elected every two years by the general membership. In order to qualify for membership in QCWA one must have demonstrable proof of having been first licensed as an Amateur Radio operator at least 25 years prior to application for membership and must be currently licensed. Membership inquiries and general correspondence should be addressed to the business office at 159 E. 16th Ave., Eugene, OR 97401-4017 USA. Telephone, 503-683-0987. Fax/BBS, 503-683-4181.

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President's Message

Lew McCoy, WIICP

I was very happy to see how well our new Journal has been received. I think we should all get behind Editor Barry and help him in any way we can. For those of you who have never been around magazine production, let me tell you that being the editor is a lonely job.

All of us should think of the Journal as 'our' magazine, which it is. And we can all contribute in some way. Barry tells me that he would like more photos of old-time ham stations. He feels that the members would enjoy seeing them; I think he's right. If any of you have any old photos that you think would work in the Journal send them to Barry; that's one way you can help. And as I've said before he always needs articles and editorial material for the magazine; that's another way to contribute to the success of the Journal. And remember the Journal is really the 'showcase' of QCWA. How the Journal is perceived is how QCWA is perceived. Another thing we have to keep in mind is that the quality of the Journal is mighty important to our efforts to attract new members.

Again I'd like to promote the National Convention coming up on Oct 13-14 in Manchester, New Hampshire. It's not too late to register; see the registration form elsewhere in this issue. I think this convention is going to be a very special one and I'd like to commend the organizers for their outstanding efforts. This year there is really something for everyone. If the XYL is not particularly interested in hearing me yack about antennas, there's some alternatives for her - how about a shopping trip or a tour. And remember New Hampshire is just lovely in the fall.

How many of you remember Phil Rand, W1DBM, and his great contributions concerning TVI and interference. I recently awarded him our Presidential Award for outstanding service. Phil is now 89, confined to a wheelchair, but still hanging in there. For those of you that don't know about Phil, he did a tremendous amount of work to actually save amateur radio from a real disaster. Just after WW II, television came along and hams were in deep doo doo. Any city that had low band TV, channels 2 through 6, had serious problems from the amateurs. In those days we all ran Class C amplifiers and unshielded rigs. Such rigs generated lots of harmonics and unfortunately those harmonics fell directly in the TV channels, resulting in visible interference - crosshatching, audio distortion, etc. Phil was a good electrical engineer so he set out to see if he could keep his harmonics at home. Shielding and more shielding and then more shielding was required. He finally whipped all of the problems but it changed our construction techniques forevermore. Phil printed and passed out books on TVI and wrote many articles in QST. I happened to be on the scene at ARRL at the time and I got the job of going out traveling to all the cities in the United States, demonstrating that we, the hams, could clean up our own house. Phil Rand, of the famous Rand family, was the prime mover in keeping the government from shutting down our hobby. Phil joined QCWA early, in 1956 with number 1259. I was very happy to bestow on Phil the QCWA President's Award. All the best to you, Phil.

One hassle I have been facing as your president is the discontent of members who are upset by our parties. They are strongly in favor of making the affairs a contest while others want to keep it as a QSO party. I plan to have an agenda item

for our Board meeting and let the Board decide once and for all - what do you think? Contest or QSO party - or even better yet, how about a QCWA QSO/Contest event? Maybe we could have our cake and eat it too! Those that want a QSO and meet other old timers - they can call it a QSO party while the contest people can say the QCWA Contest. Frankly, and very honestly, I don't give a darn. As Bob Champion, W1QV, once told me - "McCoy, after all, it is only a hobby!"



Our nominating committee has furnished me with the following list of candidates for our 1996 election of officers and board of directors. I'd like to remind everyone that there is still time to nominate other members. You have until December 31 to submit names of candidates along with the required 25 signatures of other members in good standing. The candidates are: President - John J. Kelleher, W4ZC. Vice President - Edward W. Yoder, W3YMB. Secretary - John H. Swafford, W4HU and Richard C. Kirby, W0LCT. Treasurer - Leland W. Smith, Jr., W4YE. Directors - Walter L. Brink, W3WPY; Robert Buus, W2OD; M.E. Chaffee, W1EFW; Gladys Chase, W1VPF; Charles Dorian, W3JPT; John T. Edel, K8LBZ; Gary R. Harrison, WA0RWS; Robert S. Korfhage, W7CHI; Harry W. Lewis, W7JWJ; W.W. McGrannahan, K0ORB; Richard A. Stalls, K4KYO; J. Frederick Strom, K9BSL; Croft B. Taylor, VE3CT; Jack G. Troster, W6ISQ and Amelia E. Wise, W5OVH.

We are proud to announce the following winners of QCWA scholarships. A photo and a brief resume of each winner will appear in the winter issue of the Journal. I extend my congratulations to all these outstanding young people. Brenda Lee Boehm, KB0NUJ; David Bowles, N1MZZ; Danielle Cale, N8KCC; Leah D. Choper, N3RLN; Rebecca Franke, KB9ZBA; James W. Gregory, AD4GN; Jason Handwerker, N1UEQ; Grant Kesslering, N0ICI; Peter Lanole, KB1AVL; Daniel L. Sperring, N6VBB; Robert Cresap Memorial Scholarship, Adam B. Schomouder, KA3CJZ; Leo Meyerson Family Living Scholarship, Carolyn Reiring, KB6EEK; Mac Jacobsen-John Kelleher Family Scholarship, Jeffery J. Ruth, N3HTP; Ralph Hasslinger Charter Member Scholarship, Scott Zastoupil, KB0KFX.

For some time I've been meaning to talk about member participation in our nets and QSO parties. In short I'd like to see greater participation. Please look over the list of QCWA nets elsewhere in this issue and see where you can become involved. Those who operate these nets would welcome your support and participation. I always say, "the more the merrier" when it comes to nets. It's discouraging for all involved when only a few regulars show up for a net. I've resolved that I will also get on the nets more.

I might close with some timely advice to all. This is the time to be doing all your antenna work; not when the winter winds are howling. A close inspection of your installations now may show you that your antennas are in need of repair and might not make it through the winter. Advice from one procrastinator to another! **WIICP**

General Manager's Report

Jim Walsh, W7LVN

Some really wonderful things have happened in the last few months.

First, the new Journal editing, printing and mailing has taken place and we are receiving kudos from everyone in the organization. Now, everyone can see what Jan and I look like. We have been working together for over thirty years, most of that in the insurance business, and she is taking to amateur radio activities very well. What a way to retire, in your hobby! Secondly, the Quarter Century Wireless Assn, Inc. is now on the Internet in its blazing glory. The Home Page has been created and installed and anyone in the world can find QCWA and obtain information. We think that our Home Page is remarkable in the area of amateur radio and is holding up the QCWA traditions of being a superior organization.

I realize that not everyone has a computer and also not everyone with a computer can access the Internet. However, we are reaching a group of amateurs who are in the forefront of progress. Since the Dayton convention when I handed out my own e-mail address there has been a continual stream of messages. In checking those messages about one-third have been requests for an application and information about the organization. With the advent of the Home Page, the message count has increased and we are still receiving requests for applications plus some nice comments about the 'page' and its contents. There are color pictures of the board of directors and even pictures of the fall foliage in New England on the convention portion. So, here is the address of the Home Page: <http://www.efn.org/~qcwa> Try it out, or have a friend that is on the Internet show it to you.

Third, QCWA has a club call, which is W2MM. This was the call of one of our early presidents of QCWA, Earl Thomas. When he died, so the story goes, Barry Goldwater and his wife visited with the FCC and we had our club call. At Headquarters we have installed a GAP antenna on the roof and established the club station operating position in the back office. ICOM has just presented us with an ICOM 738 transceiver for the W2MM station. I cannot express my thank you to ICOM and Chris Lougee in strong enough terms.

For the first time in the history of QCWA, Headquarters is in a commercial building, has their own listing in the telephone book (QCWA) and the club station is on the air. As soon as propagation conditions improve I intend to have a special event for our station and QCWA with the help of our local club group.

More on the cover photo: Gene Williamson, K7DBV, is my past editor of the Journal (when we first took over) and a close friend. He developed the Home Page and is active in the Boatanchor Group on the Internet. Note his red Mickey Mouse T-shirt. We bought two of these one day for the day we inaugurate the station and have a Special Event Activity.

Some questions have been raised about Journal material being funneled through the headquarters office. This is not a censorship move but an attempt to be able to fill in supplemental information for our editor when he is preparing material for the Journal. This also helps headquarters because oftentimes we're able to gather supplemental information to keep records at headquarters up to date.

A note to alert you that in November headquarters will commence mailing Chapter Report Forms and a printout of the members in each Chapter. So be sure that those of you who belong to Chapters keep your secretary informed of your status both with membership and with mailing information.

While we're talking about Chapter reports let me remind you that the Winter issue of the Journal will go into the mail December 1. All reports for the Journal need to be in our hands by November 1.

I'll be looking forward to seeing all of you at the National Convention in New Hampshire this fall. This is a time for renewal of some great friendships and meeting all the new members. This promises to be a wonderful event for everyone that attends. The scenery should be spectacular at this time of year. Come and join us. [W7LVN](http://www.w7lvn.com)



Net Check-ins

A few members have expressed interest in the net on Sundays at 2000 Z time. They have listened and then been apprehensive about checking in since they do not understand the procedure. Even with the band conditions being bad at this time, try it and be in attendance so we will have the net time sewed up when things do get better. The net check-in uses the letters following the numeral in your call. Here is the listing:

Group 1	A to E
Group 2	F to J
Group 3	K to O
Group 4	P to Z
Group 5	U to Z

Each week the group is changed so everyone has a chance of logging in early in the net period. For instance our Club call is W2MM. The letters following the numeral are "MM", so I would be in Group 3. The net control will announce at the start of the net what Group number is being used. If you come in late, listen until they change groups, and then you will know when to check in. Don't worry if you do check in with the wrong group. Everyone will understand and there is no problem.

John B. Johnston, W3BE Receives QCWA Hall of Fame Award

What is considered the highest honor of QCWA, the Hall of Fame award, was voted by your Board of Directors at their last meeting. This is to be awarded to John Johnston, W3BE, at the National Convention in Manchester, New Hampshire in October. John has had a long and distinguished career in amateur radio and has been instrumental in bringing about many of the favorable changes in amateur radio. As one can see from reading the FCC press release that follows, he has had a long and illustrious career in the FCC. John has been a close personal friend to me for many, many years. I have found him to be a very exceptional individual and certainly one of our most famous members. I am very pleased that our organization has chosen to honor John Johnston, W3BE in this fashion.

Lew McCoy, W1ICP, President QCWA.

John B. Johnston, W3BE

John Johnston is a life member of the Quarter Century Wireless Association. He was first licensed as KN2HHR on March 15, 1954. His mentor was Chester Thompson, W8RE, of Zanesville, Ohio, with whom John carried on a weekly QSO for nearly thirty years.

John is a Fellow, Radio Club of America, a member of the Mid-Atlantic Antique Radio Club and the Potomac Valley Amateur Radio Club. He is an honorary member of the Montgomery (MD) Amateur Radio Club and the San Fernando Valley (CA) Amateur Radio Club. He is past president of the Frankford Radio Club of Philadelphia, Pennsylvania, and the Penn Wireless Association of Bucks County, Pennsylvania. He has contributed articles to *QST*, *CQ* and *73* magazines as well as numerous club newsletters. In 1969, he was the recipient of the Buck Award as the outstanding amateur operator in Bucks County. He received the Ham of the Year award at the 1992 Dayton Hamvention.

During World War II, John forwent part of his high school senior year to serve with the U.S. Navy on Guam. He earned his BSEE from Ohio University under the G.I. Bill. Prior to joining the FCC he worked in industry as an engineer, principally with GE/RCA. For over twenty-three years John has been employed by the Federal Communications Commission in Washington, DC, where he has performed regulatory work for

the amateur service. Currently he is the Assistant for Personal Radio in the Private Wireless Division.

John began his FCC career at the start of a very dynamic period for amateur radio. There was a backlog of over one hundred petitions from amateur operators asking for changes to rules that were standing in the way of VHF and UHF FM repeaters, satellites, amateur television, digital systems, beacons, spread spectrum, and other developing technologies. The number of amateur operators was shrinking.

At countless conventions, John carefully explained the rulemaking issues and answered questions from the floor. One by one, the issues were resolved through rulemaking. The rules have been totally revised to accommodate practically every known activity that hams want to pursue. The various classes of operator license have become meaningful and the sequential call sign system has come to be regarded by the amateur radio community as fair and effective. During his tenure at the FCC, the number of amateur operators has increased more than threefold. One of his first assignments at the FCC was to work on rulemaking to establish a no-code operator license. It took three attempts. On the day of his 19th anniversary with the FCC, it became a reality.

Under his oversight of the VEC system, the qualifications to be an amateur operator at each class level have been established. Training is now available to anyone who wants to become a ham or to upgrade. Well over one million examinations for amateur operator licenses have been prepared and administered by some 30,000 volunteer examiners. The license grant is now being made electronically within a few days of passing the examination.

John is steadfastly guided by three beliefs:

1. Amateur operators respect rules that are timely, realistic, and easy to use.
2. Amateur operators should be involved in rulemaking that affects them.
3. Another ham is going to come up with a better idea today.

His favorite operating mode is 20 meter RTTY. His other interests are bicycling and the Baltimore Orioles.



John Johnston, W3BE, in his hamshack. Note the original W1ICP Transmatch in the upper left. Also note there is no microphone. John says he is sure that he has one somewhere, but he was unable to find it in time for this photograph!

LETTERS

Comments on the Summer Journal, QRP and Retirement

I just received the summer issue of the QCWA magazine and enjoyed it very much. I can identify with the articles and enjoy seeing pictures of amateurs such as Lew McCoy and Bill Orr. I can remember reading ads about Ted MacElroy in the magazines and dreaming of reading 77 words per minute. I have got to have the book.

I heard some beautiful CW on 40 meters the other evening and it turned out to be Doug DeMaw with a QRP rig. And that leads into another subject.

I have a 50 watt Ten-Tec Scout which I really enjoy. Right now it is back at the factory for repair. I accidentally zapped it with a shot of ESD and took out the drive transistors. And with today's compact construction, I can't see well enough to fix it.

However, I do have an Oak Hills Sprint. It is a ready-made board version of W7EL's optimized 40 meter CW transceiver (ARRL Handbook of 1994). And I have found a great challenge with QRP, running only 2 watts. The antenna is a dipole about 35 feet up. It has been up and down several times to get the length 'just right'. When the band is "good" I work California and down into the Caribbean (Caicos Island). Usually the other amateur is astounded. I am getting to expect DX. Roy Lewallen told me that he has worked 33 countries and all states with his rig. I do think that the great improvement in receivers helps the QRP man a lot (stability, selectivity and noise figures).

I am retiring on September 30, 1995. Am pushing on 67 years young. I have built a place out in the country and it is in the middle of 92 acres of woods. I have so many radio and antenna projects lined up that I probably will never get them all completed. Plan on finding Michigan Chapter 10 and becoming active with them.

Ken Mills, K8AJD

For members who participate in the QCWA CW Net

About two years ago I was asked by Rod, W5QU, to be the alternate Net Control Station for the QCWA CW Net. However, Rod has had a series of personal problems over the past year that have kept him off the air regularly. In the meantime, propagation conditions have caused some added problems. Skip conditions on 7.035 MHz caused us to change frequency to 3.535 MHz, but we have no sure vehicle to transmit this information to the membership correctly and in a timely fashion.

I might suggest that members check both frequencies when nothing is heard. The net is now on 7.035 MHz at 2000E and no doubt in the fall it will be necessary to move to 3.535 MHz again. The opportune time cannot be determined in advance to establish definite dates. However, it will be around the time we change from daylight to standard time.

The net is generally called starting about fifteen minutes prior to net time. So, if, after a reasonable time you don't hear anything, check the other frequency.

Rod has done a great job keeping the CW net in operation over the years, and we look forward to his continued presence. As alternate NCS, I've tried to keep the net going with the help of the regulars and will do so as long as possible. The informal nature of the net sometimes gives the impression we are disorganized. We are!! Please have patience with us, but please call in.

Hank, W13U

Regarding last issue's article "Ham Radio in Europe After V-J Day"

Congratulations on the fine summer issue of the QCWA Journal. There were many interesting articles, but the one that caught my interest the most was W5VYB's article on Ham Radio in Europe after V-J day.

My first ever amateur call sign was D4AHQ. In March 1942, the FCC notified me that I had passed the Class B amateur license test that I had taken in October 1941 but as the USA was involved with a war, I was only issued an operator's license and told to apply for a station license upon cessation of hostilities.

I was in Wiesbaden Germany on V-E day and in August 1945 sent to Berlin. At the end of December when USA servicemen who were hams were allowed to operate above "28 Megacycles" I applied for a license and received the call D4AHQ.

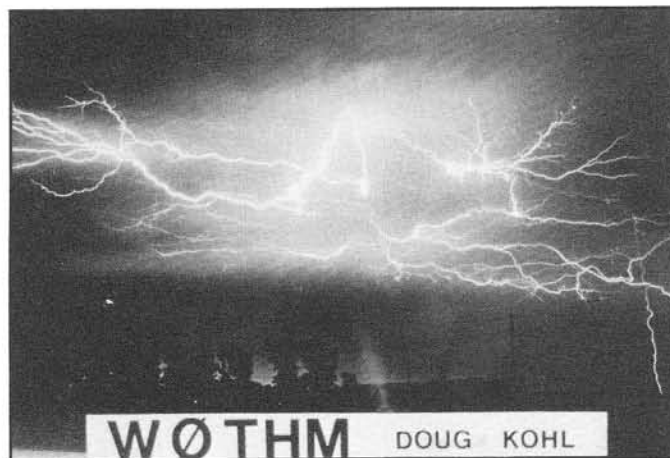
With ticket in hand I was allowed to go to a supply depot containing a mountain of captured electronic equipment. Here I picked out a 10-meter transceiver that had seen use in a German tank. By making a power supply for it and stringing up a "Lazy H" I was able to work the world. Conditions on 10 meters were excellent in 1946. I became a charter member of "ARAB" (American Radio Amateur Berlin) and would be interested in hearing from any other ARABs.

As a side note, upon my return to the USA in March 1946, I applied for and received a stateside call, W1OUZ about August of 1946; almost five years after I had passed the exam.

Ernie Bosselman, W1DO

POB 1654

North Falmouth, MA 02556



Some of the guys have suggested that my QSL card might be worthy of a pix in the Journal. I have done research on thunderstorms, severe weather, lightning, etc. for a number of years. One of the contracts was to develop a Lightning Camera triggered by the pulse radiation, or sferics, monitored at 500 kHz. The camera shutter would open prior to the visual flash and close after the discharge was complete.

Another government contract was to install a lightning and thunderstorm warning network around the launch complex at Cape Kennedy during the era of the Saturn 5 launches.

Incidentally, we currently have about 80 members of the QCWA Chapter 8 (Upper Midwest).

Douglas Kohl, WØTHM #23589

CQ DX

by Chip Margelli, K7JA
6652 Cerulean Ave.
Garden Grove, CA 92645



DX is Funny

The world of DX is really odd sometimes. Ever notice that? Perhaps it's just a reflection of life in general, but there are some serious contradictions inherent in the pursuit of DX. Just a few come to mind.

1. An "efficient 160 meter antenna" never is.
2. A "Noise Blanker" doesn't.
3. It never snows on Christmas Island (either one). And there are no reindeer there, either.
4. "QSL VIA BURO" really means "QSL VIA BURRO" or some equally fast method.
5. "DX Advisory Committee" really means, "DX Adversary Committee."
6. "You are three by three..." on 75 meters really means, "I can't hear you, but I can work you."
7. Amateur radio is a form of wireless communications. 'Nuff said.
8. The Catholics can get their headquarters designated a separate "country," but nobody can do the same with Jerusalem.
9. Something has happened to ground conductivity in Angola; the CR6s of yesteryear were always very loud, but I've never heard a loud D2.
10. "Dead" bands never are.

I guess that's what keeps it interesting.

Summer DX Highlights

I've now recovered from the 2nd Yaesu DX-Caribe Cruise, June 18-25. A good time was had by all, despite challenging conditions, a direct lightning strike on one of our shipboard antennas ("Thank You" to the lightning protector in our antenna coupler!), and the considerable distraction caused by the French girls on the beach on Martinique. Thanks to all of you who worked us, and congratulations to the VHF lads who made 21 EME QSOs with me on 2 meters while I was just using two 10-element Yagis! The folks at Dolphin Cruise Lines and the SS OceanBreeze were splendid hosts, and I highly recommend them when you want to "get away from it all."

Ten meters also provided some DXcitement, with several openings between the West coast and Asia around *midnight* in late June and early July. Loud signals were coming in from Japan, Russia, Korea, and more exotic places like Malaysia, and on several occasions the opening extended to *six meters*! This clearly was multi-hop E, but it's fun DX nonetheless. The Eastern USA and Canada also had some utterly splendid 10M and 6M openings into Europe, when 20 and 15 were sleeping.

And two meters has opened several times between the West Coast and Hawaii. How long will it be before a W4 works an EA8 on 144.200 via tropo? Turn your beams that way and be the first!

Libya was on, after a long hiatus. Congratulations to the 5A1A gang...let's hope their documentation passes muster.

Signs of the Times

Following up on my trip to Cuba last year, I am pleased to report that Arnie, CO2KK and Oscar, CO2OJ were guests at the Central States VHF conference held in Colorado Springs the last weekend of July. Once again, friendly Ham Radio diplomacy seems to bridge the gulf between peoples in ways that politicians can't. Let's hope that Washington and Havana can learn something from us.

Another hopeful sign was the July operation by a group of Israeli and Jordanian hams from Jordan as JY74X.

And don't forget the first-ever Beijing International DX Convention ("Visalia West") being held October 13-16, sponsored by the Chinese Radio Sports Association. Contact K5FUV at ARRL Headquarters for details of their tour package.

Good DX, and be sure to keep your final dipped! K7JA

JONES KEYS



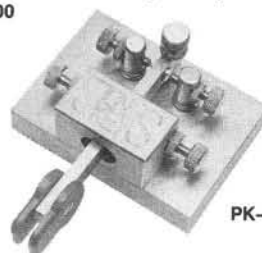
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FCC Highlights

By Jack Kelleher, W4ZC, 612 Ednor Rd., Silver Spring, MD 20905

You may recall the publicity on FCC's telephone RFI tests early in 1994. At that time the FCC said the transmitting stations most likely to cause telephone interference are citizens band, amateur and broadcast stations. Citizens band stations accounted for half the telephone interference cases, while amateur and broadcast stations caused the other half.

FCC's test of RFI to telephones at that time indicated that telephones could be "interference-proofed", and identified manufacturers of such telephones.

The feature article in the August 1st issue of W5YI Report is "FCC Looking to Privatize RF Interference Handling".

The FCC is now looking into the possibility of having the private sector become involved in resolving these interference problems. The Tampa office of the FCC's Compliance and Information Bureau is undertaking a pilot project to determine the feasibility of such a program. (Canada and Great Britain already have privatized RFI handling.)

A fact-finding meeting took place in Tampa on July 19. Present were representatives from electronic repair organizations, broadcast media, manufacturers, appliance retailers, and radio operator training/testing organizations. The meeting was moderated by Ralph Barlow, Engineer-in-Charge of the FCC's Tampa field office. Barlow said that the new program was part of the administration's initiative of "reinventing government" and improving service to the American people.

After a lengthy discussion Barlow closed the meeting by asking for proposals from those in attendance on how a pilot program of privatized resolution of interference to home electronic equipment might best be implemented.

Licensing, FCC vs. Privatizing

Most of you have read of proposals to abolish the FCC, or modify its functions. Here's still another one. According to the W5YI Report, Jim Wills, N5HCT, the amateur who got "Vanity" callsigns enacted (?) has sent a very controversial proposal to Newt Gingrich, Speaker of the House of Representatives.

Mr. Wills suggests that: "A quasi-government self-governing and self-funding tax-free organization could be created to handle all the duties of the FCC pertaining to amateur and commercial licensing with each VEC holding one seat and having one vote on the board. One member from the amateur radio community at large and one member from the commercial licensed operators at large could be appointed by the Telecommunications Subcommittee for a specified term, say 6 years, to sit on the board with full and equal voting authority as other board members. The Subcommittee would maintain oversight jurisdiction.

The new emerging organization would be called the National Radio Licensing Authority (NRLA) and would be supported by fee collection for services rendered. All enforcement problems that the NRLA could not handle would be turned over to the Justice Department for implementation. . . By this action, the FCC could devote its full time efforts and resources to whatever it does."

Proposed Changes to Part 97 of the Rules

On May 8th the FCC issued a Notice of Proposed Rulemaking (NPRM WT-95-57) concerning several changes in Part 97 of its Rules pertaining to the Amateur and Amateur Satellite Service.

Item 1: In July 1993 the National Conference of VE Examiner Coordinators (NCVEC) asked the FCC for a rule change that would provide for a volunteer examiner (VE) on-site manager at license examination sessions. (See RM-8301). The NCVEC requested that the VE session manager be recognized in the rules as the person in charge of the session.

The ARRL commented that the current requirement for three VEs to administer each examination ensures the integrity of the examination system.

In its NPRM the FCC said: "We propose to amend the rules to recognize the role of the VE session manager as the person who plans, keeps records, organizes and supervises the activities of administering VEs at each session. In our 1993 Financial Inquiry, we solicited information from sixty VEs. The responses of the VEs indicate that many VEs have organized themselves into teams locally, and that a team tends to answer to the leader.

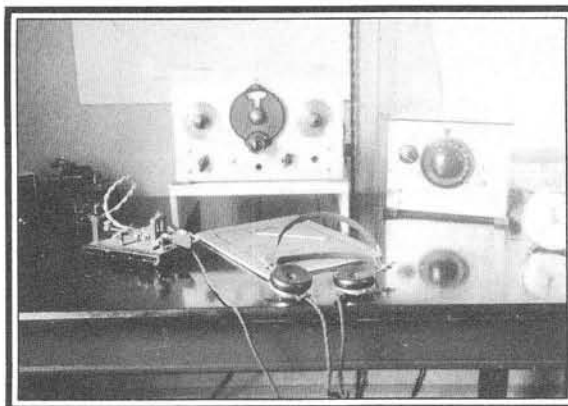
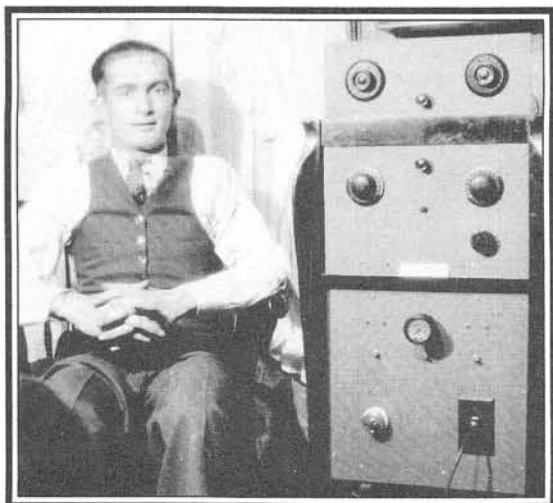
Item 2: An ARRL Petition (RM-8418) argued that former license holders whose interest is rekindled should be permitted to re-enter the amateur service without examination.

The FCC said: "We believe that the ARRL's position has merit. Former license holders previously passed examinations demonstrating that they qualified for the class of operator license held. Further, this proposal would relieve the VEs from the burden of preparing and administering examinations for former license holders." The FCC proposed to authorize administering VEs to give examination credit for any examination that the applicant previously passed in obtaining their former license.

The Commission also asked for comments concerning the criteria that should be used to allow any other qualified persons similarly situated (such as former and current holders of other types of operator licenses issued by the Commission, other U.S. government agencies, and foreign governments) to obtain examination credit, without examination, for amateur operator licenses.

Item 3: The ARRL petitioned the Commission (RM-8462) to increase from two to four the minimum number of members of a club applying for a club station license. The FCC agreed, saying "we believe there is merit to ARRL's suggestion. Requiring four members, rather than two, would assist in ensuring that radio clubs are bona fide organizations. Accordingly, we propose to increase the eligibility requirement to four persons for a club station license."





Jack Kelleher, W2DSV, Red Bank, New Jersey circa 1936, beside a homebrew MOPA transmitter built into a Victrola cabinet (!). Bottom section contained a 400-volt power supply, center section a crystal oscillator and intermediate amplifier using 6V6s, with a pair of 807s final on top. Separate ammeters were an unnecessary luxury; there are three pairs of banana jacks across the top of the power supply section, each with a different wirewound shunt. The operating position shown in the photo at right, shows a homebrew 3-tube TRF receiver and a VFO operating in the broadcast band, to facilitate calibration. Not shown is the frequency multiplier and buffer amplifier to isolate the VFO. Receiver and VFO power supply had VT voltage stabilization.

Item 4: Special event vanity call system. When the Commission proposed adoption of rules for a vanity call sign system they indicated that they would be setting aside one-by-one call signs for special events. (There are 780 such call signs). The ARRL had requested that such call signs be reserved for stations operating in conjunction with short-term events of national significance.

In response, the Commission said stations wishing to obtain a special event call sign would be required to indicate the nature of the event at least 120 days in advance, and certify that it is of special significance to the amateur service community. In addition, the licensee would submit a list of one-by-one call signs, in the order of preference. The first assignable call sign on the list would be stamped "granted" and a copy of the list would be returned to the person making the request.

The special event vanity call sign could be used for a period not to exceed that of the special event, or 15 days, whichever is less. The FCC asked that the amateur community comment on this proposal special event vanity call sign system.

Item 5: Station identification. The FCC has received several informal requests for clarification of §97.119(c) of its Rules, concerning station identification.

The FCC said it is getting requests to include a self-assigned indicator before rather than after the assigned call sign as provided in the current rule, in order to direct more attention to the station.

The FCC proposes to also permit station announcements before, after or both before and after, the assigned call sign, for example, KP2/W1AA and KP2/W1AA/KP2. This would provide the amateur service community better flexibility when making the station identification announcements. We propose, therefore, to amend the rule accordingly. The NPRM contains proposed revised language for §97.119(c).

Schedule Update For Vanity Call Sign Applications

The FCC Forum at Dayton included the following information on the status of Vanity call signs, action on which depends on the outcome of several petitions for changing the proposed rules:

"If the decision is to revise the rules that were previously adopted (in December 1994, and announced in January 1995), the Form 610-V that is now at the Office of Management and Budget awaiting approval may have to be revised. Also, the specifications for the support software may have to be changed. In any event, the first gate will not open until rules are finalized, the FCC Form 610-V is available, and our Licensing Division is prepared to begin processing the applications. We will continue your sequential call sign system for new hams and for those who do not want vanity call signs."

New RFI Book from the FCC

The Federal Communications Commission has released a new interference handbook for consumers. The 24-page full-color book will be stocked by FCC Field Offices around the country to provide people experiencing interference to home electronic equipment with information and solutions to interference problems.

The book deals not only with interference to television receivers from radio transmitters, but also illustrates and describes interference caused by poor antennas (weak signals, ghosting), electrical interference from home devices such as hair dryers, electrical interference from power lines and interference from home computers and low-power radio devices such as garage door openers.

In addition to interference to television receivers, the handbook describes solutions to interference to Hi-Fi systems, telephones, and video cassette recorders. Techniques for solving problems include the use of ferrite cores, improving receiving antenna systems, checking cabling, and isolating interconnected units to find the one that is at fault.

continued on page 50

QCWA JOURNAL - Fall 1995

Amateur Radio Satellite News

by Keith Pugh, W5IU, Vice President, Operations, AMSAT-NA, 3525 Winifred Dr., Ft. Worth, TX 76133

Introduction

The time has come for an operations status of all of the "Birds" in our flock. Over the past year, the Amateur Radio Satellite Community has been busy building, launching, and operating on the flock. There have been some high points and some low points; successes and failures. This column will attempt to bring you up to date on all of the "Birds" with a little bit of news from the AMSAT-UK Colloquium thrown in for good measure. The reports will be grouped into the following categories: High Altitude, Educational, Low Earth Orbit (LEO) Analog, LEO 1200 PSK, LEO 9600 FSK, Manned, Unsuccessful Launch, and Phase 3D.

High Altitude - AO-10, AO-13

Our oldest active "Bird," AO-10, has had a good year, but has been underutilized. Launched in 1983, AO-10 has suffered some degradation over the years but it is still ticking. Similar to some humans I know, AO-10's memory was the first to go leaving us with no control over its attitude and mode. This event also dropped an already weak mode "L" out of the schedule. AO-10 has been operating in this status for about the last seven years. It has good spells and bad spells depending on its attitude relative to the sun. During the past year, it appears that the batteries no longer hold a significant charge. Even with this handicap, it still works fine when in good sunlight. Don't cross it off of the list yet, it may outlive AO-13. Check its passband for activity and use it to the end.

The other high altitude "Bird," AO-13, continues to operate well but its days are numbered. Launched in 1988, AO-13 has also suffered some setbacks but it still responds to full control. The first major setback was the loss of the 70 cm transmitter rendering modes "J" and "L" useless. However, this loss was the shot in the arm needed to make mode "S" popular. AO-13 continues today with a full schedule of modes "B, BS, and S." Due to long-term orbital geometry changes, the latitude of apogee has moved further and further south converting AO-13 from a Northern Hemisphere "Bird" to a Southern Hemisphere "Bird." Coupled with seasonal variations in the geometry relative to the sun, we now suffer from long periods (three months) of marginal off-pointing of AO-13's antennas to keep the batteries in good health. The final blow to AO-13 is becoming more apparent each day with the decay of perigee altitude. Perigee altitude is following the predictions almost exactly as small perturbations of the orbit due to the sun and the moon cause the decay. James Miller, G3RUH, is now predicting mid-December 1996 for the final decay and re-entry of AO-13. Smart money will go with James. At the AMSAT-UK Colloquium this year, James also made predictions for visual sighting of AO-13 during perigee. Coincidentally, one of these opportunities occurred immediately after the Saturday Night Banquet and annual "Fun Junk Sale." No one saw the "Bird;" however, James was reportedly seen lying on the lake bank with his binoculars (antenna) and stopwatch waiting for the event.

Educational - UO-11, DO-17, WO-18

Launched in 1984, UO-11 is our second oldest satellite and it is still operating well. It currently transmits a full schedule of Whole Orbit Data, telemetry, and weekly UoSat bulletins from AMSAT-UK. Its 1200 baud ASCII signals are easy to

copy with the proper demodulator and a quiet two meter environment.

Occasionally the digitalker is still heard. At the AMSAT-UK Colloquium, Doug Loughmiller, KO5I/G0SYX, UoSat Ground Station Manager, reported that the watchdog timer occasionally resets early and the transmitter drops off line before the command station catches the problem. Don't be surprised when this happens. Wait a day or two and it should be back on the air.

Better known as DOVE, DO-17, has recently passed the 400 day mark in continuous operation. As discussed before, DOVE is not up to its full potential due to some equipment problems that have plagued it from launch in 1990 but it is at least on the air and stable. It is currently running only the 1200 baud AFSK packet telemetry and text. The duty cycle has been reduced to about once every 30 seconds, so you may have to wait a short time to hear the packet. This has been done to keep the transmit power high. The "S" band beacon is off at the present time. Earlier this past year, DOVE was transmitting a computer generated voice repeating the phrase "HI THIS IS DOVE IN SPACE" and a series of audio tones along with the packet telemetry. The digital voice from a voice chip started degrading further and was taken off line before it failed entirely. Work is progressing on an alternate voice capability using software generation of voice through voice synthesis techniques. The test tones were the early manifestations of that technique. Keep listening and don't give up.

After five years in space, WeberSat, WO-18, continues to take pictures and spectrum samples on a regular basis and provide this data along with telemetry on the 1200 baud PSK downlink for analysis. Its PSK downlink has suffered recently from some carrier creeping back in, causing some difficulty in recovering data. The alternate transmitter has been used and appears to work better. In general, WeberSat is working OK but the data recovery rate is lower than it was early in its career due to the carrier problem.

LEO Analog - RS-10, RS-12, RS-15, FO-20, AO-27

Three "Radio Sputniks," RS-10, RS-12, and RS-15 account for most of the activity on the LEO Analog "Birds." RS-10 continues to operate very well in mode "A," two meters up and ten meters down, and is one of the primary "Easy Birds." RS-12 continues to operate very successfully in mode "K," 15 meters up and ten meters down. Many people have now worked WAS through this "Easy Bird" using only an HF rig with dual VFOs and a simple antenna.

At least two DXCCs have now been awarded for operations through RS-12. RS-15 was our Christmas present in 1994 from the Russians and has been gaining in popularity as a mode "A" Bird. It is unique among the LEO Analog "Birds" in that its altitude is approximately twice as high as its competition, RS-10 and RS-12.



The signals are not quite as strong and stable as RS-10 but it has frequent 6 to 10 minute windows to Western Europe from the center of the USA.

Fuji OSCAR-20, FO-20, started the year as a hybrid digital and analog satellite; however, its digital side suffered a problem and it is now doing duty as our only mode "J," two meters up and 70 cm down, SSB and CW "Bird." Like AO-10 it suffers from not enough use so crank up the station and work it. Doppler tracking on this "Bird" takes a little getting used to, but the rewards are good strong signals and easy access.

Our only FM voice "Bird" at the moment is AO-27. This Microsat is capable of other modes, but has been utilized, when in amateur radio service, as a mode "J" FM voice repeater. In general, it is only available when it is in sunlight and not being interfered with on the uplink. Unfortunately, there are unlicensed operations on its uplink, 145.850 MHz, in some parts of the world. AO-21 popularized the FM voice mode until its untimely demise and AO-27 is picking up the pieces. Watch out for doppler on the downlink.

LEO 1200 PSK - AO-16, LO-19, IO-26

Pacsat, AO-16, is the leader of this flock with well over a year of uninterrupted service as a store and forward relay "Bird."

Launched in 1990, AO-16 is gaining in popularity again now that the "queue" has gotten so long on the 9600 baud "Birds." LuSat, LO-19, suffered a computer crash about three months ago and it has taken until now, early August, 1995, to get it reloaded and back into BBS service. Thanks to the Argentina command team for their tireless efforts. ItAMSAT, IO-26, has been inactive most of the past year due to several computer crashes and an apparent power shortage. Command has changed hands to another team in Italy and the learning curve hasn't helped. We hope to welcome IO-26 back into the flock soon.

LEO 9600 FSK - UO-22, KO-23, KO-25

These three "Birds" do the lions share of the digital work these days with their high speed data links. Over the last three or four years, the routine has settled into UO-22 for international message relay or gateway operation and the others for individual point to point operations. Earlier this year, UO-22 suffered a mysterious computer crash that apparently locked up the CPU, requiring that power be removed to effect a recovery. The UoSat command team figured out a course of action and 24 hours later the "Bird" was back in service. KO-23 and KO-25 are operated by the Koreans and are the most popular "Birds" with individual operators. KO-23 has the highest altitude and consequently the longest windows. Pictures are excellent. Judging from the "queue" these birds are getting nearly overloaded with individual activities. Fortunately all of the "Birds" are working well except for problems getting into the "queue." There have been some short outages on all of these "Birds" but, in general, it has been a good year. The introduction of programs like WISP and SATSKED for complete automation of digital satellite ground stations has contributed heavily to the popularity of these "Birds."

Manned Space - MIR, Space Shuttle (SAREX)

The Russian Space Station, MIR, launched in 1986, continues to provide many contacts via its packet bulletin board and FM voice.

First amateur radio operations were in 1988. The most popular operation from MIR in recent months were from Dr. Norman Thagard during his long stay aboard MIR. Norm enjoyed ragchewing and many operators had the chance to have meaningful QSOs with him from horizon to horizon. During the busy times leading to the first docking with the shuttle, both voice and packet capabilities were utilized for backup communications

with the Russian and American command stations.

Three Space Shuttle SAREX missions have flown this calendar year: STS-67, STS-71, and STS-70 in that order. STS-67 set another new record for number of school contacts and made many general contacts as well. STS-71 was the first MIR docking mission and the first test of the MIR rendezvous radio. Five school contacts were completed, but few general contacts were made. Limited time was the biggest problem. SAREX operations occurred at the end of the mission after undocking with MIR. Only about two days were left for SAREX operations. STS-70 did much better for general contacts. Many times the astronauts were heard calling CQ in voice with less than normal response. Two more missions are scheduled before the end of the year so "stay tuned."

Unsuccessful Launches - TechSat-1, UNAMSAT-1

Two new "Birds," TechSat-1 and UNAMSAT-1, with the hopes of two nations, Israel and Mexico, were launched on a Russian modified ICBM in March. Unfortunately, the fourth stage had a short burn coupled with no burn of the fifth stage and the payloads failed to achieve orbit. Of course this was a great disappointment for the builders and the rest of the amateur radio community; however, both builder groups are rebuilding and looking for new launch opportunities. Let's wish them luck and offer any assistance possible.

Phase 3D - The Satellite for All Amateurs

The most ambitious amateur satellite project ever is showing good progress at builder's sites around the world and at the integration site in Orlando, FL. The launch has been slipped two months by Arianespace from April 3 to May 29, 1996. Several of the packages are complete with others nearing completion. Peter Guelzow, DB2OS, gave a complete status at the AMSAT-UK Colloquium. The 24 Ghz transmitter was shown and discussed by Danny Orban, ON4AOD. Complete definition of the wiring harness for the entire "Bird" has recently been received and work is in full swing in Florida making up the harness. Propulsion system plumbing is complete, and most of the antennas have been fabricated and tested on a full-scale mockup on the antenna range at the integration facility. The Integrated Housekeeping Computer and the CAN bus along with other digital items were demonstrated recently in Tucson, AZ, during a ten-day meeting of Lyle Johnson, WA7GXD, Chuck Green, NØADI, and Peter Guelzow, DB2OS. These items are now ready for integration.

Fund raising received a real shot in the arm recently with the matching funds program provided by the ARRL. The \$150,000 available for matching has now been fully subscribed. Other ideas are forthcoming. AMSAT-UK is sponsoring a "your call in space" campaign. For a 200 pound sterling donation, you can have your call etched on a small plaque that will fly in Phase 3D.

Contact AMSAT-UK for further details. Let's keep up the good work and raise the rest of the funds necessary for the launch. We have enough to finish building the "Bird," now let's complete the launch funds.

Summary

As you can tell, it has been a busy year in amateur radio satellites and we have a lot of capability for everyone to use.

There has never been a better time to get involved in Amateur Radio Satellites. The AMSAT-UK Colloquium was fun and informative, but it is now time to plan to be in Orlando, FL, October 6-8, 1995, to get another look at the Phase 3D "Bird" nearing completion and find out more about all facets of the amateur satellite world. [W5IU](http://www.w5iu.com)

Sylver Belles

by Esther Given, W6BDE, 117 La Granada, Moss Beach, CA 94038

Forty years ago last spring, Irma Weber was issued novice license KN6KCI and from that moment on Irma was and still is an energetic ball of fire in the amateur radio community.

Irma was born in Chicago. When she was eight years old the family moved to Los Angeles where she attended elementary, high school and UCLA where she picked up her BE degree and teaching credential. Her first job was at a high school where she taught mechanical drawing at a time when most males over 18 were off to war. Most of her students were boys just a few years younger than she and all much taller than her under five-foot stature.



Irma Weber, K6KCI with 'Squeaks'

Back in Chicago, her folks were acquainted with the Weber family who had a brilliant and charming young son, Louis. At four years of age Irma announced that when she grew up she intended to marry Lou. Seventeen years later after moving west and having no contact, Irma met Lou again and her prediction headed for accomplishment. In the same year that Irma earned her Masters degree she became a bride. As she tells it, she got her MS from UCLA and her MRS from Lou Weber.

In addition to his accomplishments as an aeronautical engineer, Lou embraced amateur radio and was licensed K6GHU in 1954. Wanting to share this fascinating hobby with his YF, he encouraged her to study for a license. In February 1955 Irma passed her novice exam and was issued KN6KCI. Two months later she upgraded to general class and K6KCI was off and running. During her first year on the air Irma and Lou provided a public service link between the Marysville flood area in the north and concerned southern California. They also assisted tirelessly in amateur communications in the Refugio fire in 1955.

When her ticket was only four months old, Irma attended the first YLRL convention in June 1955 in Santa Monica, California. Irma's first "eyelash" QSO with YLs from all over the nation revealed she was blessed with a special talent. She had an excellent memory for names and the call letters that went

with them. She established 75 lifelong friendships and became an active member of the Los Angeles YL club in one day.

By the time Irma had been licensed 21 months she had earned Brass Pounder's League certification on 2 meters and won the California section in CQ's VHF-UHF contest.

In 1955 Irma, Lou and son Lynn moved from Los Angeles to Santa Barbara. There they set aside one room of their new home as the radio shack, erected a 71 foot tower with beam and were ready to take on the world of amateur radio. They ran scheduled contacts with Guam, Okinawa and Antarctica for phone patches; participated in RACES, Civilian Defense, YL nets, contests and local community services for the Santa Barbara area including the annual Fiesta parade and raging brush fires.

Irma joined Airforce MARS in 1966 as AFA6KCI and was one of the first civilian MARS home stations permitted to run phone patches between southeast Asia and the U.S. In two years, October 1966 through September 1968, Irma placed an estimated 8,700 U.S. phone calls of which 6,700 were completed (2,000 callees were not home). Thus at least 13,400 thrilled listeners exchanged the joy of actually talking to a loved one half a world away. Voice exchanges like the airman hearing his new son cry (thanks to Irma's coaching his YF to pinch the baby) were as great a joy to Irma as to the happy new parents. Several times Irma was able to track down an injured airman to his hospital bed. She even handled a couple of "Dear John" episodes. In her service Irma was a combination of emcee, Cupid, good fairy and shrink. She was the bringer of joy to lonely GIs and their stateside loved ones. One time she ran a patch to the State Department when other communication routes failed them.

Special pleasures resulted from Irma's MARS service. In 1968 when Irma attended the YLRL convention she was met at the Denver airport by a young couple for whom she had provided MARS communication during the war. As a result of Irma's example, the young woman had obtained a ham license and was a convention delegate. When the Webers moved to Thousand Oaks in 1970 they were greeted on their second day by a neighbor who recognized the ham license plate on Irma's car. She had patched him through to home when he was overseas.

Thousands of thank you greetings were sent to her plus a few gifts of appreciation from military groups with MARS stations and letters of recognition and commendation from commanders of military operations benefitted by her MARS services. By this time a 4-drawer filing cabinet was needed to hold all the certificates, commendations, newspaper publicity, photos, scrap books and allied "hamology".

Ham radio also enabled Irma the pleasure of providing phone patches for a few celebrities including Art Linkletter and Lucille Ball.

Among Irma's fond memories is having served as radio contact for a group of horseback riders. Los Rancheros





Irma Weber, K6KCI, with husband Lou, K6GHU, in 1962.

Visitadores, an elite group of men, made a weekend trek following one of the old mission trails up the Coast Range north of Santa Barbara far from civilization in the days before CB or cellular phone. OM, Lou, K6GHU/EM (equestrian mobile) was one of the riders and Irma at home base their contact with the outside world.

For several years Lou had been losing his sight and in 1967 he became totally blind. No stranger to handling the soldering iron or reading gauges, Irma now inherited the job of maintaining the antenna system and other chores demanding vision on both the mobile and home rigs.

In 1970 the Webers moved into a new home in Thousand Oaks. Son, Lynn, WA6IBR was in college and radio contact with him was added to the busy ham schedule. Broadcast conditions were excellent from the new QTH and Irma continued to reap kudos.

Lou became a silent key in 1987, terminating 20 sightless years during which he had been an excellent coach for chief of maintenance for Irma, who spent many hours wielding the soldering iron as Lou described each procedure from memory.

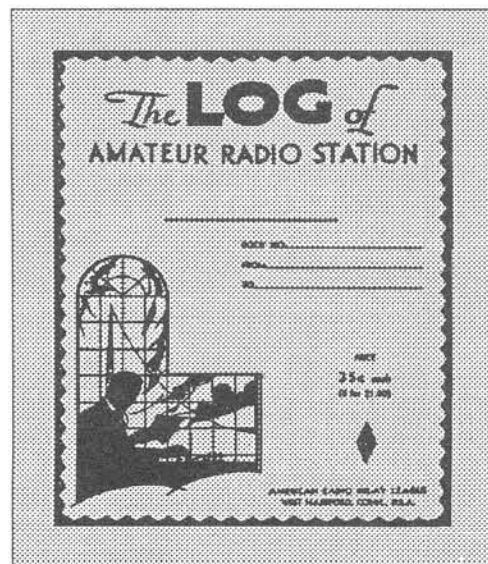
Irma's ham activities over these 40 plus years have included: earned BPL on 2 meter phone, DXCC, YLCC, RCC, winner of CQ's UHF/VHF Award for California, 5 times winner of phone section of YL Anniversary Party and numerous public service awards and recognition. For many years she has been an assistant Director of the Southwest Division of ARRL and served for decades as net control of both the YL Open House and YL Ironing Board Nets. She has held numerous offices in YLRL, YLRC of LA serving as custodian of the club call, W6MWO, and Lad's 'N Lassie's certificate. Her lovely home is often their meeting place.

In addition to ham activities Irma likes reading, gardening and the loving care of her "housemate", a precocious cockatiel named "Squeaks". Her back yard boasts a prolific loquat tree that keeps her "jamming" at harvest time and numerous scrub jays to whom she feeds peanuts by hand. She and her sister, Evelyn, N6DEJ, who resides in Los Angeles, frequently enjoy weekends at the beach. Irma's son and family live in San Jose. Her granddaughter is currently casing college campuses anticipating 1996 enrollment. Her mid-teen grandson is considering a ham license "someday maybe".

Irma Weber has accomplished an enviable record in amateur radio achievement and well deserves the appropriate title: K 6 Kilo Cycle Irma W6BDE

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Our thanks to Tracy Reese, WB6TMY, who fell in love with this era of amateur radio and conceived and furnished the art work.

In cooperation with ARRL, the Quarter Century Wireless Assn., Inc, presents this special edition.

Chapter Reports

Chapter 1, Cleveland

Our summer get-together was held at Dimitri's at noon on Saturday, July 22nd. After a taste-tempting luncheon enjoyed by our members and guests, our Chapter President, Bernie Hinrichsen, W2NTB, asked our Vice-President, Andy Doles, W8UDG, to introduce the guest speaker.

He was John Edel, K8LBZ, a director of QCWA and chairman of the activities committee. John was accompanied by his engaging YL, Janet. Informally but enthusiastically John described the national activities of our organization. In addition he outlined some of the awards that QCWA presents, for example: Worked 50 States, Worked 100 Members, Worked 60 Chapters and Worked 500 Members.

The respective certificates are issued by the Activities Manager upon presentation of proof of eligibility. The usual question-and-answer period indicated the interest of the 65 members and guests. We also had a chance to meet with Director Edel personally and found him a very likable chap.

Following the talk, door prizes were distributed. President Hinrichsen had his lovely wife, Helga, and our Treasurer, John Brant, W8WAB, present the gifts to the lucky winners. Prizes were donated by Chapter members, as well as the Illuminating Company through its former Vice-President, John Mistic, W8VRJ. Our next luncheon-meeting date is set for Saturday, October 14, at which time election of officers for 1996 and the annual awards will be conducted. Everyone, members and friends, far and near, are cordially invited to attend.

Congratulations to George Keltner, K8SGM, new Director on the Cleveland Chapter 1, executive board. George is trustee of our new club station, KB8ZBH.

James A. Mullin, W8KKK, Ethel M. Tomazik, N8MZJ and Richard L. Petscher, W8BNT, are new members of QCWA and Cleveland Chapter 1. Welcome YL and OMs!

Our condolences on the passing of Donald Head, K8NCZ. R.I.P. OM!

Joseph Zelle, W8FAZ

Our Cleveland Chapter 1 Badge was designed and produced by our Chapter Treasurer, John Brant, W8WAB, some 10 years ago. We proudly display our Cleveland Chapter 1 Badge at all of our functions.



Chapter Reports are a very important part of the Journal and we would like to see regular reports from all chapters. If your chapter is not represented on these pages, please ask your secretary to file a special report for the Journal.

Please send the reports to General Manager, Jim Walsh, to arrive no later than the following dates: August 1, November 1, February 1, and May 1.



Rod (How's DX) Newkirk, W9BRD, and his fiancée, Betty Broome, VE3ZBB, joined the brunch for the first time. Rod recently joined Chapter 2. He and Betty met on 30 meters!

Chapter 2, Chicago Area

The Chicago Area Chapter 2 premier meeting at the beautiful Itasca Country Club, had another outstanding program at the annual members summer brunch meeting. We get to see many of our members at this occasion who are unable to drive at night and so do not attend our other three quarterly evening meetings.

After a varied collection of delicious brunch foods, President Jim Quinn-W9MFY, conducted table introductions and a brief business meeting.

Paul Crum-KF9BH, formerly, and soon we hope to reacquire W9LC, Program Chairman, introduced the entertainment. The Skylarks Unlimited. They put on a most enjoyable show featuring music of the 30's to the 50's. One of our audience said she "couldn't pick a favorite from their numbers". The selections were all wonderful and nostalgic.

Leo Knirko, W9MOL

Chapter 5, Delaware Valley

The Delaware Valley Chapter 5 held the Spring Luncheon on May 13, 1995, at Michaels Restaurant on Street Road & Richlieo Road in North Philadelphia area. The theme of the meeting was awards for a number of our old time members. After the luncheon was completed, a short business meeting was opened by chairman George VanDyke, W3HK. Then the presentation of the awards was led off by a 70 year certificate as a ham for Horace P. Deacon Jr., W3AJF, who was not able to attend because of illness. A 65 year certificate was presented to Walter E. Cranmer, W2AWR, who was present and is in good health. 60 year certificates were presented to John B. Power, W2AXU; Harold R. Steelman, W2BZI; Fielding O.L. Waters, W3DIP; William G. Tunnell, W3DVC; Allen D. Richert, W3EQX and Irv Klepper, W3HGD. A 55 year certificate was awarded to William A. Suggs, W2RPH. Then Century Club Awards were presented to Fielding O.L. Waters, W3DIP; William F. Petty, W2HAZ and Allen D. Rickert, W3EQX.

Everyone enjoyed the chance to get together on a very nice spring day and see old friends again. There were 29 at the luncheon and we thank all those that participated. All the ladies returned home with a door prize.

All Chapter members are reminded that the Chapter 5 Net meets each Sunday morning at 10:00 AM on 3917 kHz. W2EEQ, Russ Snedeker is net control. Members are urged to make an effort to check in as often as possible. Also all members that have not supplied one of their QSL cards for display at meetings is urged to send one to the Secretary, W2UAE.

Don Field, W2UAE



L to R: Currin Skutt, W8FSZ, retiring Secretary-Treasurer; Beverley Stoner, K8ZJU, new Secretary-Treasurer; Paul Spooner, W8YMI, retiring Vice-President, new President; Richard Johnson, K8HBG, new Vice-President; R.J. Beach, W8NBj, retiring President. Photo courtesy W8VWY

Chapter 10, Michigan

On May 20, 1995 sixty-two members and guests gathered for a lavish luncheon and annual meeting at the Waterfront Restaurant in Cadillac, MI. A moment of silence was observed for members who had become silent keys during the previous year.

Election of Officers was held with the newly elected Officers being: President, Paul Spooner, W8YMI; Vice-President, Rich Johnson, K8HBG and Secretary-Treasurer Beverley Stoner, K8ZJU. The new President expressed many thanks to the retiring officers, especially Currin Skutt, W8FSZ, who has acted

as Chapter Secretary-Treasurer for the past seven years, with the help of his YF Eleanor.

Two meetings were set up for the coming year, a pot-luck picnic at noon on August 16, 1995 at Kenwood Park, Cadillac and next years annual meeting and luncheon at 1 PM, May 4, 1996 at the Waterfront.

Good fellowship was enjoyed by all, and as usual the food was outstanding.

Beverley Stoner, K8ZJU Secretary-Treasurer

Chapter 14, San Diego

QCWA Chapter 14 members have been active this summer. The Wednesday evening net has provided a sounding board for a variety of topics. Those of us who participated in Field Day had fun and again honed our skills at setting up and operating a station under emergency conditions.

The Amateur Radio Information Booth at the Del Mar Fair sponsored by Radio Clubs in the San Diego Area was a success. Six Chapter 14 members manned the booth during one day of the Fair. Participants were Reed Evans, W6EHR; Ralph Held, K6QS; George Mitchell, K6ZE; Jack Pletcher, W6JIR; Walter Sweadner, KO6EE and Reuben Onstad, N6BAS. Other Chapter 14 members manned the booth representing other clubs during the Fair.

On July 26 several Chapter 14 members active in the Amateur Radio Emergency Service (ARES) participated in the Miramar Naval Air Station Mass Casualty Drill that involved the Navy and many of the San Diego Area hospitals. ARES provided communications assistance in the exercise. ARES Net Control at NAS Miramar involved Chapter 14 members Steve Adams, K6PD and his wife, Bonnie, KG6LH. Other Chapter 14 members serving as communicators were Delbert Radant, N6JZE; Joe Saugier, K6CD; Walter Sweadner, KO6EE and Reuben Onstad, N6BAS. This type of activity has enhanced the standing of ARES in the San Diego community.

We were saddened by the recent passing of Chapter 14 member Bob Utschig, K6QJP. Bob was very active in San Diego radio amateur organizations, especially ARES. Chapter 14 of QCWA, along with the San Diego Amateur Radio community will greatly miss Bob, K6QJP. We extend our sympathy and condolences to the Utschig family.

The next meeting of QCWA Chapter 14 will take place the first part of October, 1995. It will consist of a Sunday buffet brunch, a drawing for prizes and a program. Further details will be included in a news letter to be mailed out to Chapter 14 members at a later date. Visitors are welcome.

Our Chapter 14 net continues to be active, led by John Wieting, K6QM, every Wednesday at 2000 local time on 145.520 Simplex. Join us.

Reuben Onstad, N6BAS, Secretary

Chapter 16, Barry Goldwater

Twenty-four members and thirty-two guests attended our Spring meeting at the Pine cone Inn at Prescott, AZ, on April 19th. After lunch President Ralph Barr, WØDNO opened the meeting and everyone was introduced. Among our guests were Instructor Terry Pemberton and four students from the Prescott Granite Mountain Middle School Amateur Radio Club.

As part of our program, Terry showed a video tape and told us of the experiences the group had in planning, gather-

Chapter Reports, continued

ing equipment, setting up the station facilities and organizing the communication network between Prescott and Texas for the SAREX Experiment the school was chosen to undertake in July 1994. In the eight minute window of opportunity about 15 students got to talk to the Space shuttle crew members. Media coverage, both TV and Newspaper, was in attendance for the 5 AM event.

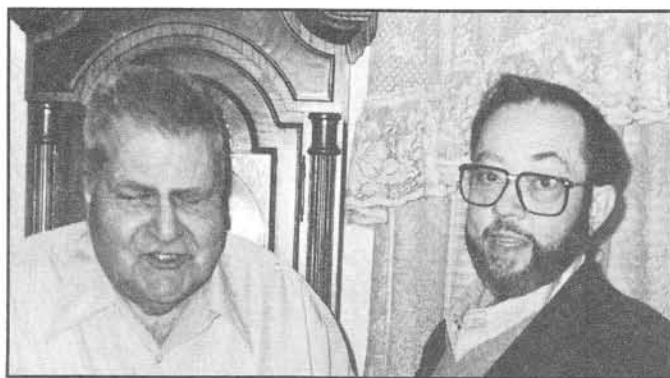
Our Chapter had helped Terry with technical advice and found and donated some equipment for the project.

How did Chapter 16 get started? Graham Maconomy, W6BUE, recruited 12 other QCWA members in the Phoenix area. In this group were Holland Day, W7HTY, Charles Blake, W7BP and Leon Faber, W7EH. In August 1962, a petition was prepared and eleven of the 13 founder members signed and it was sent to QCWA Board of Directors for their action. A Charter for Chapter 16 was issued on October 11, 1962 and the Arizona Chapter was on its way. Today we have 123 members including Charlie Blake and Lee Faber. Holland 'Dutch' Day, QCWA #634 passed away on May 26, 1995.

Our next event will be a 'Going Away' lunch at the Pine Cone Inn on August 19th for Ray, K7AA and Diana, N7EJO Porter. The Porters are moving to the Northwest in late August from their present home in Dewey, Arizona.

Chapter 16's annual meeting will take place in October and then the 8th annual joint QCWA/SOWP luncheon meeting will be held at the Scottsdale Safari Resort in Scottsdale on December 2nd.

Cliff Bruce, W7ER, Secretary/Treasurer



New member Beryl Masters, WBØEJJ, on left with Chapter 35 President Larry Reeves, WAØGKZ.

Chapter 35, Kansas

Chapter 35 is killing two birds with one stone! One photograph - two people in the local news. Some Chapter members suggested we show a picture of our newest member, Beryl Masters, WBØEJJ. Beryl's handicap is his eyesight, but he excels in all else.

Our President, Larry Reeves, WAØGKZ, looks like California Judge Ito, with or without makeup. He's using his Judge Ito \$2000 desk chair, won in a local contest, with great pleasure.

So what's the rest of the Chapter doing? Its summer - we eat and meet on Thursday's and Bruce Brewer, WØWHK, continues to call the 37/97 net with summer checkins numbering about 20 weekly. Everyone is looking toward fall for the "cool QCWA action"!

Cass Cassing, WØGJG, Publicity

Chapter 37, Harrisburg

Chapter 37 held its quarterly meeting at the Bonanza Restaurant in Carlisle, PA, on June 10, 1995. Fifteen members and two guests attended.

John Izzo, W3JIE, and Mert Baird, W9GZV, were both reported to be ill. Mert is reported to be at a therapy center in Newville.

Our speaker was Rob Dixon, N3JPH. Rob is a meteorologist for one of the local television stations. Rob's presentation was on the history of weather forecasting from Aristotle to the present time.

Dave Barrows, W8IJ Secretary

Chapter 41, Dallas

Chapter members were recently introduced to the world of high altitude amateur radio ballooning through a fascinating program presented by Matt McCullar, KJ5BA, a member of the Lockheed Amateur Radio Ballooning Association. His audio-video presentation showed how high tech instrumentation packages they build containing a two-meter radio and miniature video camera are carried aloft by weather balloons to altitudes of 100,000 feet before releasing the parachuted package. The entire flight from launch to recovery is tracked by 2-meter radio.

A rarely seen event captured on the "steerable" video camera aimed up at the bottom side of the balloon envelope at maximum altitude showed the instant of bursting when the balloon was obliterated into a kaleidoscope of countless tiny pieces. Members agreed that "it was the next best thing to having been there."

Bob Olney, N5NT



Dean Wallace, W2ANM receiving his QCWA Gold Certificate commemorating his 75 years as a licensed Radio Amateur from Chapter 42 members: (L to R) Howard Beard, WA2FLX; President, Rod Pratt, K2AFK; Sec/Tres Jim Chase, W2VGE and George Bennison, W2IXR

Chapter 42, Mohawk Valley Chapter

The spring meeting of the Mohawk Valley Chapter QCWA was held on May 13th at the Captain's Table Restaurant in Barneveld, NY with 29 members and guests in attendance.

The high point of our meeting was the presentation to Dean L. Wallace, K2ANM of Herkimer, NY of a QCWA Gold Certifi-

cate commemorating Dean's 75 years as a licensed radio amateur. Dean was first licensed as 8AAF in 1920. He is still active on the air, although most of his activity is confined to two meters FM. Though wheel-chair bound, a very young 96 year old Dean was able to attend our meeting and give us an insight into his early days in Amateur Radio.

Rather than having a speaker for this meeting, as is our usual custom, our dinner committee decided to have each member speak for a few minutes and tell just what he or she was doing these days in Amateur Radio. This idea produced a very interesting and varied meeting with many different activities mentioned. Thanks to Chuck Pankiewicz, W2WGL for this idea.

Our fall meeting is scheduled for October 21, 1995.

Jim Chase, W2VGE Secretary/Treasurer



L to R. President Charles Woodward, KFØFF; Bonnie Taylor, WB4FSF holding Baby Charles; Gary Taylor.

Chapter 45 Citrus

The regular monthly meeting of Citrus Chapter 45, QCWA, was held at Stacy's Buffet in Altamonte Springs, Florida, June 16, 1995.

While it may not be a unique event at a QCWA Chapter meeting, it could be a rare occurrence; a baby shower given to one of our members, Bonnie Taylor, WB4FSF. Bonnie, husband Gary, and their newly adopted son, Charles Samuel Xavier Taylor were greeted by President Ralph Woodward, KFØFF. With a new two week old baby, Bonnie did not really feel she should attend the meeting, but her husband who was in on the planning, persuaded her to come and bring the new harmonic.

After the luncheon, the Chapter received the recommendations of the Executive Committee and elected Mort Cohen, WA2ARS, as Treasurer in place of John Morhart, KB4TAG, who had presented his resignation at the May meeting.

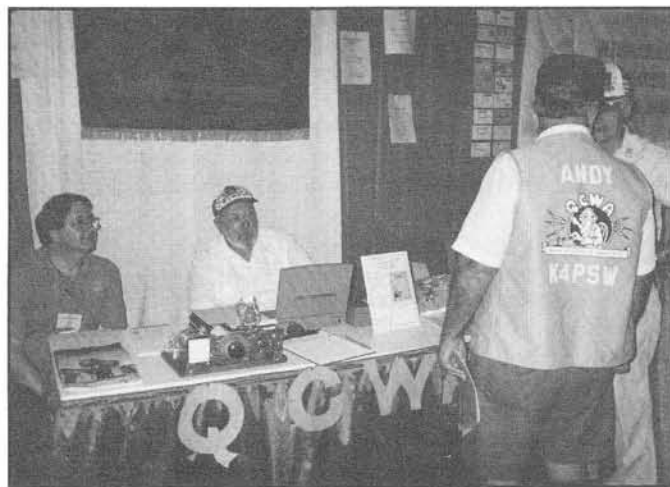
Bonnie Taylor, WB4FSF, citing demands of having become a new parent asked that her resignation as Chapter Secretary be accepted. Paul Turner, W1DLP, was elected Secretary for the remainder of Bonnie's term.

The program of the meeting was presented by Walt Maxwell, W2DU. He detailed the history of the first operational relay satellite launched by the USA, December 8, 1958. This satellite received and relayed a telemetry message, a voice message to the world by President Eisenhower, followed by another telemetry message. We heard tapes of these historic transmissions.

After the meeting was closed, Bonnie opened the numerous baby gift packages members had brought. Baby Charles slept peacefully through the entire meeting.

The Citrus Chapter meets on the third Saturday of every month at Stacy's Buffet Restaurant, Wekive Square, Altamonte Springs, Florida. This is at the junction of SR436 and SR434, about a mile west of I-4 on SR436. All hams in the area are invited to join us. The food and fellowship are excellent.

Paul A. Turner, W1DLP Secretary



Atlanta Chapter 49, Atlanta Hamfest booth. Pictured left to right: Jud, W4NZJ, Pres.; Walt, W3WPY, National Dir.; Andy, K4PSW, Chapter 100 and Wendel, K4VN, Officer.

Chapter 49, Atlanta

The Atlanta Radio Club's annual mid-July hamfest turned out to be a very successful social event for QCWA. Held at Cobb County's Galleria Convention Center, many QCWA'ers stopped by the Chapter 49 Booth to reminisce and exchange war-stories!

It was a particularly good time for Chapter 49'ers because of the presence of two National QCWA directors.....Walter Brink, W3WPY and Gary Harrison, WAØRWS. In addition to helping us man the booth, Walt brought his laptop computer to check the details of each attendee's QCWA background. Gary and his beautiful XYL provided more "class" to our humble booth.

Note in one photo the homebrew "811A" CW breadboard transmitter. That was courtesy of the builder, Wendell Cushing, K4VN. It was the germ that generated many homebrew stories.

Phil Goodman, K4FXB

Chapter 51, Tex-La Golden Triangle

The February meeting was held at The Boondocks Restaurant, a local fish house overlooking an alligator-filled bayou where it is traditional to feed them with left-over hush-puppies.

W. T. Block, local historian and author discussed the early history of both amateur and commercial radio in southeast Texas. He also told of his post-WWII experiences operating in Germany as D4APT. There his most unusual QSO occurred one morning in 1947 he heard a ham in Greece calling "CQ Frankfort".

He answered stating that he was near Frankfort and had a

Chapter Reports, continued

direct teletype line into the Frankfort base. There had been a devastating earthquake in Greece and the Red Cross was trying to obtain emergency supplies warehoused in Frankfort. At this point a ham named Lucius broke in saying that he was located in Frankfort and asked if he could be of help. The ham in Greece asked him to relay request for the needed supplies to the proper authorities.

Lucius responded that he would have the two C-47s loaded and on the way to Athens in two hours. The Athens ham was not too impressed with this "boast" and again ask him to relay the message through the proper channels. At this point Lucius identified himself as General Lucius B. Clay and again promised that the planes would be loaded and on their way to Athens in less than two hours. The Athens ham thanked him profusely and D4APT remained very quiet.

The March meeting was held in conjunction with the Orange, Texas Hamfest. Everyone talked about the bargains in the flea-market and congratulated 90 year old Matt Furth, W5IWA, on winning the Oldest Ham at the Hamfest award again this year.

Our April meeting was held at Dorothy's Front Porch with 32 Hams and guests present. Leon Purkey, W9OTZ, talked about the Houston Audubon Society Nature Sanctuaries at High Island, Texas. The society owns and operates two small, but extremely important, bird sanctuaries there.

Each year "birders" from Canada, Finland, England, France, New Zealand and all over the United States come to the little gulf coast community to witness the returning flocks of migratory birds from Mexico and South America. They come equipped with binoculars, bird books and check-lists in hope off adding a few more "rare ones" to their Lifetime List. (Does this remind you of DXers?) Leon has been a volunteer worker at the sanctuary long enough that a body of water (Purkey's Pond) bears his name.

The May meeting was held at Homey's Restaurant with 37 members and guests present. The program was presented by Greg Bostwick, KFDM-Channel 6 meteorologist who talked about hurricanes, an important subject for those of us living on the Gulf Coast. He left us with these words of hurricane wisdom.

Don't build a two-story house on the gulf coast.

Don't think of being in a mobile home in a hurricane.

Buy flood insurance.

Dub George, WA5BFF, Bulletin Editor.

Chapter 53, Suncoast

The Suncoast Chapter held their March meeting at the Elks Lodge in Sarasota. This is a better place as we have a private room. There were 38 members and guests present.

President John Karban, W3IGC, called on guests to introduce themselves.

Vice-President Croft Taylor, VE3CT, Canadian Director of QCWA introduced his guest, John Edel, K8BLZ, also a Director of QCWA. Croft then complimented Bob Siff, K4AMG, on his efforts to locate a meeting place. Bob said he was still working on other choices.

Bob Siff then introduced Mike Becker, KE4WBL, who gave a talk on hams activities in Weather Watch. They report severe local weather conditions to the Weather Bureau.

The Suncoast Chapter again met at the Elks on April 6, 1995. There were 38 members and guests present.

President John Karban, W3IGC, called on the guests to stand and introduce themselves. He then called on the Secretary and Treasurer for their reports.

John then asked for nominations from the floor for officers. Silence fell!! Since no program had been arranged John called on members to tell how they got interested in radio. Seven spoke on their start and one woman told what it was like to be married to a ham.

A discussion followed on location and day for the summer luncheons in June, July, August and September. It was agreed to meet at The Wharf in Venice on the first Thursday of each month.

The Suncoast Chapter held their last business meeting of the year on May 4, 1995 at the Elk's Lodge in Sarasota. There were 22 members and one guest present.

President John Karban, W3IGC, opened the meeting by calling on the Secretary and Treasurer for their reports. He then called on the guest to stand and introduce themselves.

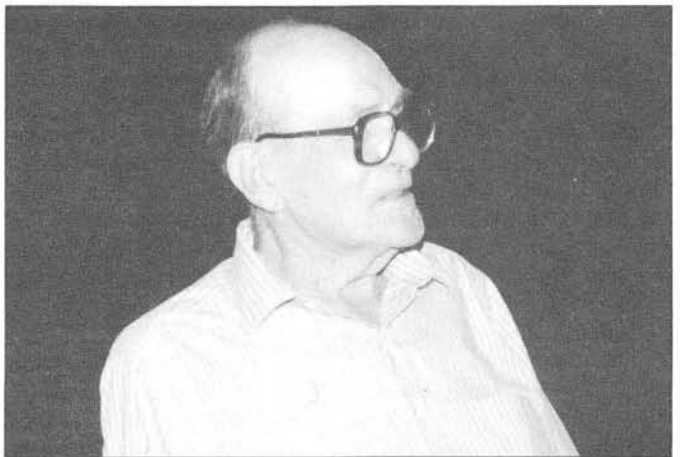
Bob Siff reported that he is still checking on places to hold our business meetings next year as our present place has some disadvantages.

John then brought up the subject of officers for next year. Croft Taylor, VE3CT, had agreed to be president. No one volunteered to be vice president so John Karban, W3IGC, offered to fill that spot. Virginia Menerick, W8MEJ, and Bea Pearsall, KA9QJS, were willing to continue as Secretary and Treasurer.

It was then announced that we could not meet at The Wharf as they required a guaranteed number and a minimum of 20 reservations. It was then decided to meet at the Half Baked Cafe in Venice after one of the members had been there and liked it.

Bob Bookwalter, W4NWF, gave a talk on use of the Morse Telegraph system and code by the railroads and companies such as Western Union and Postal Telegraph. He demonstrated the eleven letters of the Morse Code that are different from those in Continental Morse and explained the reason for the changes. He showed how SK in Continental Morse derived from 30 in American Morse. Bob closed by giving a story of use of the telegraph on the railroad by using a model locomotive complete with sound effects.

Bob Bookwalter, W4NWF, Historian



Chapter 53 member Art Miligan, W8KW, saying good-bye at last meeting and saying he hopes to be able to come back.



L to R: Hub Gerend, W9OUT; Reno Goetsch, W9NA; Bob Baird, W9NN; Harry Eckland, W9SKX; Charlie Dawson, W9CUW; Gerry Van Den Wymelenberg, W9VOW; Joe Ash, W9ODV; and Jack Krause, W9JK. Photo Courtesy of W9YCV.

Chapter 55, Wisconsin

On a lovely Wisconsin day, the members of Chapter 55 and guests gathered at Machut's Supper Club, Two Rivers, WI for their spring meeting. An overwhelming majority had expressed their desire to return here because of the wonderful food and facilities.

Many enjoyable "Eyeball QSOs" took place before dinner. Then at noon, following the invocation, all partook of a delightful family style dinner. After dinner, Chairperson Ed Seruga, KE9JJ asked for a moment of silence in memory of the chapter's Silent Keys. Those named since our Fall meeting last October were: Al Krones, K9AA; Larry Schepp, KA9UBM; Terry Norbury, W9LUB; Joe Stevens, W9GAH and Ray Swenson, W9VTL. During this moment, we also had longtime member J. Travis Baird, W9VQD in our thoughts. Travis is at Bradford Terrace in Milwaukee slowly recovering from a severe stroke he suffered recently. A "Get Well" card went around for all to sign wishing Travis the best on his road to recovery.

The ladies then went to another area for some bingo games and prizes while the chapter held its business meeting. Secretary, Jack Krause, W9JK read the minutes and Treasurer Erv Froehlic, W9RZW reported on the treasury. The members accepted both as read. Then Bob Baird, W9NN, a charter member of QCWA and recent recipient of a 75-year plaque, presented QCWA certificates to the following:

Charles Dawson, W9CUW - 55 year Gold Certificate and Century Club Certificate (101 years)

Harry Eckland, W9SKX - 60 year Gold Certificate and Century Club Certificate (101 years)

Reno Goetsch, W9NA - 60 year Gold Certificate and Century Club Certificate (101 years)

Jack Krause, W9JK - 60 year Gold Certificate and Century Club Certificate (102 years)

Herbert Gerend, W9OUT - 60 year Gold Certificate and Century Club Certificate (102 years)

Gerald Van Den Wymelenberg, W9VOW - 60 Gold Certificate and Century Club Certificate (103 years)

Joseph Ash, W9ODV - 70 year Gold Certificate and Century Club Certificate (104 years)

These members in absentia also received certificates as follows:

Lawrence Kemmer, W9RSX - 50 year Gold Certificate

James Molledahl, W9BI - 60 year Gold Certificate

Howard Olds, W9KI - 60 year Gold Certificate and Century Club Certificate (101 years)

Melvin Bernstein, W9WZ - 50 year Gold Certificate

Following the presentations, Bob Barid, W9NN, a retiree from WGN, told several humorous incidents that occurred during some broadcasts throughout his years at WGN.

The business meeting continued with an announcement regarding the forthcoming joint meeting of the three Wisconsin chapters at Robbins Restaurant and Supper Club in Oshkosh, Saturday, August 26. Next the Chairperson selected Charlie Dawson to head the nominating committee as there is to be an election of three board members during the chapter's October meeting. The terms of Roger Zaun-W9UVV, Bill Kimble-WA9OAY, and Fred Becker-W9KKM, are expiring. Chairperson Ed Seruga, also asked Dick Scarvaci, K9CAN, to select a meeting place in the Port Washington, area for the October meeting.

The drawing of men's door prize numbers followed and then the meeting adjourned.

Lester A. Peterson, W9YCV



The new officers for the year, rear: Glen Schultz, WØIJR; Dean Haworth, ACØS. Front: Mo Mobler, WAØDFW; Ken McMahan, WØTRO; Lu Philippi, WØQKR; Sol Abramowitz, WØWSK and Jim Blecha, W9KRE.

Chapter 58, Colorado

Our Chapter had its meeting on May 7th. And the new officers were introduced. The new officers for the year are: Glen Schultz, WØIJR, (Dir.); Dean Haworth, ACØS, (Dir.); Mo Mobler, WAØDFW, (Dir.); Ken McMahan, WØTRO, (Sec/Tres.); Lu Philippi, WØQKR, (Dir.); Sol Abramowitz, WØWSK, (Pres.); Jim Blecha, W9KRE, (Dir./ex-Pres); Bruce Henke, K6OU, (Vice-Pres.).

There were 70 in attendance and I want to thank Jim, W9KRE, for the job he did as President the last 3 years.

Sol Abramowitz, WØWSK, President

Chapter Reports, continued

Chapter 63, Oklahoma

I am happy to report that we have four new members in our Chapter since the last newsletter. This brings our membership up to 65 members. Our new members are: Joe Buswell, K5JB, first licensed 1967, Ret-US Postal Service; Ronald Tucker, K5IGB, first licensed 1961, Ret-OKC Fire Dept.; Charles Wilhite, K5NK, first licensed 1968, still among the working; Johnny Fulcher (JD), W5LII, first licensed 1944.

We will be having our Quarterly Luncheon at 1200 (noon) on Saturday, July 29th at the Holiday Inn which is located at the corner of NW 39th and Portland Ave. Because Ham Holiday is going to be on Saturday only this year, we will have a luncheon instead of our QCWA breakfast. The luncheon will cost \$7.55 per person, this covers the tip and tax. Our guest speaker will be Tom Comstock, N5TC, of Texas A&M, who is the director of the West Gulf Division of ARRL.

Speaking of future programs, we have members like Lee, W5VZY; Bob, W5HXL; Charlie, WA5JGU; George, W5JKK and KK5BX who have been on trips around the country, etc. Bob had a video of a old movie taken on Field Day about 30 years ago at the VHF club meeting recently and it was very interesting. If anyone knows of someone who would be interested in giving a program for us at a meeting, we would appreciate hearing from you.

The Chapter will have it's next Quarterly Luncheon in October, 1995. It has been suggested that we schedule a luncheon out of Oklahoma City, since we have members living outside of the City area. Also it has been suggested that we look into having a picnic at one of the State Parks, weather permitting.

Election of Officers and Directors are still a few months off, however, at the October meeting, we will need to appoint a nominating committee to select a slate of Officers and Directors to be elected. Our last committee did a very good job. They contacted several members who agreed to accept the job if they were elected. This gave the Chapter a choice of those they wished to vote for. Please be thinking about it as we will need a good nominating committee as well as members who will be willing to serve in these important positions.

We would like to thank Jim, KK5BX, for the article that he put in the Summer QCWA Journal about the Amateur Radio Operators who took part in furnishing communications for the Oklahoma City Bombing on the 19th of April, 1995. Again the Amateurs proved that we can be counted on for communications during adverse conditions. Good Job Guys and Gals!!!

We have been having very good attendance on both our 3856 and Two Meter nets. The Two Meter net is on Thursday night at 1900 hours on 145.41 repeater. The 3856 kc net is on Sunday morning at 0800 hours. On the 80 meter net, Gene, K5DLE, keeps a record of check in's. If you miss four or more times, you will be dropped from the roll call. (Not From The Chapter) Gene supplies each net control with a roster each Sunday morning. We have 65 members in the Chapter but not all join us on the air. This way we do not run through 65 names, but only those who check in with us regularly. The Officers and Directors rotate on calling the net on Sunday morning. Bob, W5HXL, handles the Two Meter net when he is in town. When he is gone he gets different ones to fill in for him and they all do a good job.

Norman M. Wilson, W5FLO, Secretary/Treasurer



Croft Taylor, VE3CT, on right, presents a 72 year certificate to Jim Cooper, VE3CR, at a recent meeting of Chapter 73.

Chapter 73, Southern Ontario

The first meeting of the season for Chapter 73, Southern Ontario section, was held on May 13, 1995 at the Plainsman Restaurant near Hamilton, Ontario. Many members and guests attended; a total of 118 which was the largest attendance for Chapter 73 to date.

We were fortunate to have Croft Taylor, VE3CT, our new Canadian Director on the QCWA board address the meeting. At this time, Croft Taylor awarded special citations to three of our members: Stan Moir, VE3SM, 75 years; Jim Cooper, VE3CR, 72 years; Gord MacPhail, VE3IH, 65 years.

The interest and activity of our Chapter 73 members is in excellent shape.

Fred Hammond, VE3HC Secretary/Treasurer

Chapter 87, Evergreen

Since the deadline falls on the same date as our auspicious Summer Picnic, will have to report on that event down the line.

This years picnic is combined with our Twentieth Anniversary Celebration. Many things are in the mill to make this a gathering to remember. Those members who founded Chapter 87 and are still around will be recognized. It's unbelievable how many have left us in this brief period but their memories still abound with us.

Our "Can't Stay At Home" members are still out and about. Gerry, W7PCP, is out with his XYL in their motorhome and last contact we had with him was from South Dakota as they headed for Wyoming on their way home. Good signal from his mobile on 75 meters.

About the time Gerry will be near his home base our wandering retiree, Don, W7ZNN, will be enroute to Hawaii again to look around. Not quite sure what he will be looking for but we will expect a full report on his return.

Many of the members of our Chapter were hard hit with a very heavy windstorm and thunderstorm the first week in July. W7HGO tells about the trees being topped from the storm. W7ENQ had a near miss with a lightning strike about a quarter mile from his house. No ham damage but apparently the cable system invited part of the strike into the house and his

TV gobbled up enough to knock out some of the set.

Beside's hamming many of our members engage in gardening. One of those is the old Judge, Bill, W7GHT. He told us on net the only way to get your tomatoes to pollinate is to "shake the daylight's out of the blossoms." He swears it will work but also suggested you do this chore in the dark when the neighbors can't watch you. So fellow QCWA members, there's your gardening tip presented at no charge.

Here's the story of the month for this issue. We picked this off our, every Sunday, net. Seems that Annie, the XYL of Scott, KB7TA is a very good needleworker and enjoys doing cross stitch. They also have a noisy little kitty-cat who likes to get into Annie's work. So recently she jumped onto Annie's lap, grabbed the needle and thread, and ran as only cats can run. They searched and searched and couldn't find the needle and thread. Finally a short amount of thread appeared to be hanging from the cat's mouth. No chance to catch and remove. So for the next several days, Scott and Annie became litter box watchers. . .if you can imagine following a cat everytime it headed for the cat-john. Anyway, finally after many days a needle and a length of thread appeared in the box! Their ordeal was over, except for figuring how on earth a cat could swallow and pass along such an item! Any of you folks out there have a good idea as to how this could happen??? Only a ham could provide such a story.

Our good friend, Bob, WU7J, who lives in Egypt (no, it's not the country, but a small section of land in north Washington State) reports that he has been keeping busy bailing hay and getting it in the barn. He did have time to take a short trip to a small town on the Columbia River and while there purchased a rather rare tree called a Ghinko.

All of us out here in the Great Northwest send our best wishes to the rest of you around the country.
Al Cutting, W7ENQ

Chapter 92, Northern Lights

This is going to be a very brief newsletter. Unfortunately the only news we have is bad news. I'm sure most of you have heard the terrible story of the bear attack that resulted in the deaths of Marcia Trent and her son, Larry Waldron. John Trent, KL7DG, was one of the founders of our QCWA Chapter, and he and Marcia have been active in the Chapter from that day on. John, we feel and share your loss.
Larry Plessiner, AL7IW, Secretary/Treasurer

Chapter 98, Dogwood

Our annual meeting was held at ABC Restaurant, Saturday, June 3, 1995.

President Tom Clark, VE7TE, called the meeting to order at 1245 PDT. He called for three minutes silence to our recent Silent Key's Wilf Moorhouse, VE7US, and Russ Mac, VE7OR, and also to past members including Kenneth Schop, VE7AHN.

I made several phone calls to our members including Bill Rievley, VE7CGI, in Powell River. He was going on a forty mile walk at Port Albernie. Bill was licensed in 1932.

Ernie, VE7FB, Secretary, read the minutes of General Annual Meeting for 1994 and was questioned on the donation made to the Antique Radio Museum.

Report from Dave Gilmore that our old Silent Key Plaque has been re-furbished and is now on display at the Antique Radio Museum. Dave also has purchased a new plaque with the recent silent keys.



L to R: President, Tom Clark, VE7TE, Vice President; Edna Savage, VE7SH, Secretary; Ernie Savage, VE7FB, Treasurer and, Dave Gilmore, VE7YG.

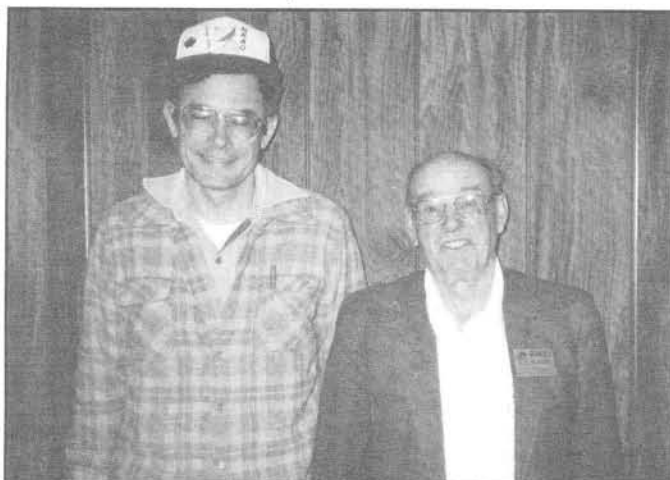
President Tom Clark called for election for new officers for 1995/96. The present officers agreed to stand for another term of office. They are: President, Tom Clark, VE7TE; Vice President, Edna Savage, VE7SH; Secretary, Ernie Savage, VE7FB; Treasurer, Dave Gilmore, VE7YG; Good and Welfare, Mrs. Gladys Clark; The Interior Director, Richard Williams, VE7RP; The Islands, we are requesting a volunteer from the Islands.

Motion by Allan Venning, VE7LL to move that all actions of the previous executives be ratified. Seconded by Allan Vennig, carried.

Mr. President asked for a show of hands for breakfast or lunch. A brunch has won.

Being no further business the President called for an adjournment.

Ernie Savage, VE7FB, Secretary



Chapter 105 Secretary Russ Ward, WA4ZZU (left) and President O.D. Keaton, WA4GLS.

Chapter 105, Middle Tennessee

Chapter 105 was first chartered in 1977 by a group of local hams, most of which lost interest in the chapter; therefore, it became dormant.

A few interested hams decided to attempt to re-instate the

Chapter Reports, continued

chapter, so a questionnaire was distributed to all known eligible hams in the Middle Tennessee area; the response was favorable. An organizational meeting was called for July 23, 1994, with 20 hams present. Chapter meetings were held periodically, with temporary officers being selected to conduct business until permanent officers could be elected. Chapter 105 was re-chartered on November 21, 1994 and now has a membership of 26.

Regular Chapter meetings are the second Saturday; February, May, August and November, usually at 11 AM, the location may vary from time to time. The average attendance has been about 50%. The meetings may consist of business and fellowship and/or programs of various topics. Everyone is encouraged, especially QCWA members who have no chapter affiliation, to attend our meetings. We are just getting started, so come and help develop this Chapter.

We publish a quarterly newsletter, which announces information concerning the upcoming meeting, along with other information concerning the Chapter's activities.

O.D. Keaton, WA4GLS



Outgoing President Ludwig Gruenberger, DL6KQ, surrendering the flag to incoming President Albert Leinemann, DL9AR

Chapter 106, German Chapter

Twenty-eight members and guests attended the annual meeting of chapter 106, held on May 5, 1995 in the Park hotel Margaretenhof in Gohrisch. At 8:15 PM Chairman Ludwig Gruenberger, DL6KQ opened the meeting. In his report he mentioned the special activities of the chapter: at all big events of the DARC (German Amateur Radio Club) the QCWA was present, also at the Ham-Radio in Friedrichshafen, the big German Hamvention, with more than 20,000 visitors. The QCWA chapter 106 was also present at the DNAT-the German Netherlands Amateur meeting in Bad Bentheim- and at the Interradio in Hannover. At Bad Bentheim the Amateur radio-Museum sponsored by the German Chapter got a room for their exhibition.

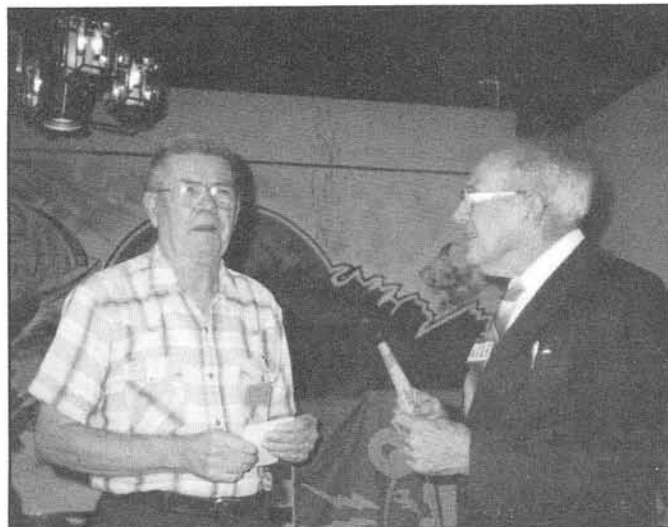
The net control of the QCWA nets mentioned, that the participation at the CW and SSB nets in very low.

The treasurer Hans-Juergen Hautsch, DL1JOE gave his report and reminded all not having paid their dues, to do so in the near future.

After that the chairman of the election announced the results. The officers for the next two years are: President Albert Leinemann, DL9AR, Vice-President Fritz Kirchner, DJ2NL, Secretary Werner Lembcke, DL1ZC and Treasurer Hans-Juergen Hautsch, DL1JOE.

After several questions from the floor had been answered by the officers, the meeting was closed at 10:20 PM.

Werner Lembcke, DL1ZC Secretary



Chapter 107 Secretary, Jay Hitchcock, K8YGH, presenting 60th Anniversary Award to Walter Farley, W4QE.

Chapter 107, Central Florida

It is with sadness that I write this report. Chapter 107 has lost another of its founding members. Charles Chapman, W4SVB, became a Silent Key on July 11, 1995. Charles was a Mining Engineer and retired from Mobile Chemical in 1973. He also was a past President of our Chapter, and has also served as Vice-President, Secretary and Treasurer. Charles will be missed by his family and many radio friends.

As I write this report I find it hard to dig up any news. As many of you know, the summer time is a slow period for us; I guess for all the Chapter's in Florida. Many of our members go to cooler climates for the summer. We look forward to having them back in the Fall so we can get our Fall programs going.

I would like to invite all amateurs to look for us on 14.245 on Thursdays at 12:30 AM, EST. Our Saturday net on 7.243 at 9:00 AM, EST, is well represented by club members. John Spark, W4LHP, runs these nets and invites all amateurs to join in the fun.

Chapter 107 meets the third Saturday of every month at 11:30 AM EST at Stacy's Buffet, 4320 US Hwy 98 N, Lakeland, FL. (one mile off I-4).

Jay Hitchcock, K8YGH, Acting Secretary

Chapter 108, Beaver State

The Beaver State Chapter 108 held its quarterly meeting on July 15, 1995, at the Springfield - Eugene Shilo Inn with 22 members and guests in attendance. As our President and Vice-President were on travel status, Secretary, W7LBH, opened the meeting with introductions.

It was reported that long time member, Mike Stahon, KM7T, recently had become a Silent Key and a period of silence was

observed in his memory.

A short business meeting was held to appropriate this years contribution to the QCWA Memorial Scholarship Fund and also to announce that our Annual Meeting will be in October which will include the election of officers for 1996 among other business items.

Jim Walsh, W7LVN, presented an interesting question and answer discussion program relative to Internet and the related Super-Highways connection to QCWA Headquarters, as well as connection to many other interesting sources of information and data. Members asked pertinent questions of which most were answerable which kept the exchange going.

Our next meeting will held in Albany on October 21, 1995, with Secretary Fred Dickson, W7LBH, and Mrs. Dickson as hosts. The meeting has been set for 1200 (noon) at Mann's Buffet, 2125 Pacific Blvd. SW, Albany, Oregon.

Fred Dickson, W7LBH, Secretary

Chapter 112, Yankee

The Yankee Chapter met with the other New England chapters for the annual summer picnic on July 22. This year, the Pine Tree Chapter hosted the event which was held at Fort Williams Park in Cape Elizabeth, Maine. This park is the site of the often photographed Portland Head Light. With perfect weather, we were all treated to a great view of Casco Bay and the variety of ships that were sailing that day. Prizes were won by N1JS, Joe Santangelo; W4GXZ, Blanche Randles; and W1EES, Harold Chase. Many thanks to W1JTH and W1TGY, Phil and Dot Young of the Pine Tree Chapter, who acted as our hosts.

Preparations for the convention are well under way. Yankee and the other New England chapters extend the invitation to all who are interested in attending.

The next chapter meeting for Yankee will be the annual Christmas party scheduled for December 9th. Check the next issue of the Chapter newsletter for full details.

Chuck Walbridge, K1IGD, Secretary/Treasurer



L to R. Gary Harrison, W4ØRWS; Warren Amfahr, WØWL; R.L. Smith, WØQUF; George McKercher, WØMLY and Lawrence Wacha, KØEDO.

Chapter 123, Lee DeForest Iowa

Chapter 123, the Lee DeForest, Iowa Chapter, held a QCWA luncheon, May 13th in conjunction with Hamboree 17 - Iowa State Convention at the Marina Inn, South

Sioux City, Neb. Over 700 attended the convention. 50 attended the luncheon, representing Chapter 123, 102, 8 and many more.

Gary Harrison, W4ØRWS, actively participated in QCWA activities. He had just returned from the International Meeting at Eugene, Oregon. He shared highlights of the meeting with us.

Lawrence (Larry) Wacha, KØEDO, Chapter 123 President, presented QCWA Awards to the following Chapter 123 members:

WØMLY, George McKercher - 60 year Award

WØQUF, R.L. Smith - 55 year Award & Century Award

WØWL, Warren Amfahr - 55 year Award

Not every award winner could be present. The following members will receive their awards at later Chapter 123 meetings this year:

KØHPP, Albert Victor - 60 year Award

WØOJD, Vern Petersen - 55 year Award

We had a QCWA table at the convention. At the table: Past President Bob Beals, KØDBW; President Larry Wacha, KØEDO and Director Gary Harrison, W4ØRWS.

Al Smith, WØPEX, Secretary

Chapter 128, Pelican

The Pelicans continue to meet during the Summer. As usual our meetings are held at Staceys Buffet in the Tyrone Gardens Shopping Center, located at 10th Avenue North and 58th Street in St. Petersburg. The Pelicans flock together at 11:30 for a little bit of social, then invade the buffet line near 12:00. So if you are in St. Petersburg any 3rd Wednesday of the month come and join us, you and your guests are always welcome to dine with the Pelicans.

The Pelican Chapter has been awarded a Club Station License, with the call of KF4PVB. It is the intent of the Pelicans to obtain the Vanity Call Sign of one of our one by two call sign members who are now Silent Keys when they become available. The Trustee of KF4PVB is K9BSL, the Pelican Chapter Secretary.

Don't forget that the Pelican "Big Brown Bird" picnic will be held again this year on November 8th, at Lake Seminole Park, Shelter 13, in St. Petersburg. This has been a yearly affair for the Pelicans, the chapter is looking forward to seeing all QCWA members and Guests. There will be prizes and refreshments. The menu will be fried chicken with all the trimmings. Come one come all. Get your tickets from Don Bice, W4PCO, phone (813) 347-2707. Everyone must have a ticket prior to the picnic, so the food can be ordered from the caterers.

J. Frederick Strom, K9BSL, Secretary

Chapter 134, Pine Tree

The regular quarterly meeting of the Pine Tree Chapter was held on June 3, 1995, at the Dresden Inn at Dresden, Maine, with 50 members and guests in attendance. Following the luncheon, the meeting was called to order at 1:00 PM by President, Sal Aliano. Two new members were present, Fred Bean, W1YTQ, from Brewer and Charlie Chapman, W1WTG from Virginia Beach and Raymond, Maine.

The Pine Cone Net is off the air for the summer but will be back on the air each Sunday on 3.942 MHz at 2:30 PM the first Sunday after Labor Day. There was a moment of silence in honor of two Silent Keys, Edwin Hadley, W1EXD, and Norris Hamlin, K1YXO. Both had been Charter members of the Pine Tree Chapter.

Chapter Reports, continued

A report of the nominating committee was given by Dot Young, W1TGY. 51 ballots were returned out of 75 ballots that were mailed to qualified members. Since all candidates were unopposed, and since a majority voted for the listed candidates, they were declared elected for the two year term. They will take office at the annual meeting September 16, 1995. The elected officers are:

President, Johnson Pitman

Vice-President, Bill Woodhead

Secretary/Treasurer, Philip Young

Directors Bernard Langley, Robert Ward, Charles Stenger, Sal Aliano

Dot also reported on the most recent meeting of the National Convention planning committee. Quite a few items have been donated by Pine Tree Chapter members to be used as prizes at the event.

QCWA Anniversary Awards were presented to the following members: W1IQO - 60 years; W1ITU - 60 years; W1HTG - 55 years; W1NDC - 55 years and the Century Award. Awards were on hand for 65 years to W1BFA; 60 years to W1CE and 55 years to W1MVD. Since they were not at the meeting, their certificates will be delivered to them.

On July 22, the Pine Tree Chapter hosted the combined New England Chapter picnic. Thanks to the cooperation of the weatherman the day couldn't have been better at Fort Williams Park, site of the famous Portland Head Light. The sun was bright with a light sea breeze that made for ideal conditions for outside activities. A low haze at sea burned off around noontime so that the view of the harbor and its boat traffic was unobstructed. By mid morning guests started arriving. The New England Chapters included: Maine, the host Chapter, 7; New Hampshire, 7; Massachusetts, 17; Vermont, 2; Connecticut, 8 and Florida, 1, for a total of 42. The Pine Tree Chapter would like to thank all those who made the trip to Maine, and hope that they enjoyed the experience at the Portland Head Light. The 1995 picnic will be hosted by the Pioneer Chapter.

Gladys Chase, W1VPF, Chairman of the National Convention Planning Committee, convened a meeting of committee members and discussed the status of each category as of today, the 22nd. There will be three more meetings of the Committee before the event. Two will be at Andrea's in Southboro, Mass., and the final one in September at the Convention site in Manchester, N.H.

See You At The Convention!

Philip Young, W1JTH, Secretary/Treasurer

Chapter 137, Shenandoah Valley

Meetings: Third Wednesday of odd-numbered months, at 12:30 PM; Carper's Valley Golf Club, 1401 Millwood Pike (Route 50 East), Winchester, Va.; reservations requested.

Information: Perry F. Crabill, Jr., W3HQX, (703) 662-7526
Mailing address: 225 Milam Dr., Winchester, VA 22602

Thirty-one members and guests attended the meeting of QCWA Chapter 137 at Carper's Valley Golf Club on Route 50, east of Winchester, Virginia on May 17, 1995, despite rainy weather. A social period at 12:30 PM was followed by a buffet luncheon at 1:00 PM. The business meeting that followed was opened by President Walter Johnson, WA4HVU at 1:50 PM.

ARRL Roanoke Division Director John Kanode, N4MM, reported that the FCC began processing club calls on March 24. The next increment or "gate" for vanity calls may be in June or July. A new FCC proposal asks for comments on allowing former amateur licensee's exam credit for new licenses, and also holders of US non-amateur radio licenses with comparable requirements.

The FCC is considering an ARRL proposal that the minimum number of members for a club should be four, instead of two as at present. Also, that one person at a VE session should be designated as a manager.

"1x1" vanity calls may be issued for special events of national significance, for a limited period of time, subject to certain rules for filing and showing justification for the request.

Charles Anderson, NF3X, reported that the Hagerstown Hamfest on Sunday had two problems; the date and the weather. However, the hamfest finished somewhat in the black. The date for next year's hamfest will definitely NOT be on Mother's Day.

Walter Johnson reminded everyone that the next meeting, on July 19, will feature Ed Rich, K3THD, with a program about stained glass.

The speaker was Ed Helvey, WA2FMT, a Winchester area resident originally from Northern New Jersey. He is currently an independent audio and video producer with clients across the country, and also does business consulting, seminars and workshops. Ed had learned how to put the computer to work and considers the Internet the most exciting information concept in the history of civilization. His topic was "Exploring and Exploiting the Internet."

The Internet is an outgrowth of the Department of Defense ARPANET established in 1969 for computer networking, allowing any computer to communicate with any other computer, using a common language. It connected research centers and colleges with a decentralized network without a central computer.

ARPANET grew over the years with the addition of various nodes and host computers. In 1984 computers on the network exceeded 1000; by 1987, the number was more than 10,000. In 1988 businesses began to connect to the system. In 1989 the number of connected computers grew beyond 100,000, and in 1990 the system became officially known as Internet. It is actually a network of networks.

The "World Wide Web" was added in 1992; by this time the number of computers on the Internet broke one million. With the Web, you can travel around the world getting information in a matter of only seconds. If you enter keywords for a subject, the Internet will tell you where you can find it. Today, there is no accurate figure on the number of connected users; estimates vary from 30 to 65 million.

Even the White House and Congress are connected to the Internet; you can access these for President Clinton's schedule, for information about your Congressman or Senator or what's happening on Capitol Hill.

Internet keeps growing; now you can see video clips, listen to all kinds of music, and even tune in radio stations. It offers everything wonderful and good; unfortunately, it also offers everything nasty and bad. With suitable software and equipment, you can talk with your voice to others similarly equipped. This enables you to make long distance calls without a toll charge; you pay only for local access to the system.

America On Line, Prodigy, and Compuserve are national computer services you can subscribe to which include Internet

access. They have no local nodes in Winchester, and you must pay toll call charges to reach them. The only local access in the Winchester area is via Shentel Service, an adjunct of Shenandoah Telephone Company; it has a local 869 number in Stephens City. The minimum charge is \$20 per month for 15 hours on line.

To get on the Internet, your computer should be a 386 PC or better, or a recent Macintosh model. A lot of hard drive space is needed; the minimum is 256 megabytes. At least 4 mb of RAM should be available; 8 mb is better, and 16 mb much better. The modem should handle at least 14.4 kb, but 28.8 kb is much better. An SVGA monitor with .28 dot pitch is preferred.

Ed provided a handout of amateur radio information downloaded from Stanford University's computer the night before the meeting. He also provided other handouts, including four pages of information about crafts for the ladies.

The meeting was adjourned at 3:30 PM.

Perry Crabill, W3HQX Secretary/Treasurer

Chapter 143, North Colorado

Chapter 143, North Colorado held its annual business meeting luncheon on Saturday, May 6, 1995. Retiring Chapter President, John Peters, N1EC, was presented with a plaque acknowledging his participation with the words, "He Captained us Admirally - 1993-1994." John is a retired navy Captain and conducts meetings with the skill and forcefulness of a nuclear submarine skipper. . . which he was.

Jim Fahnstock, W0OA, was elected Chapter President and formally "assumed command" from Captain (excuse me, Mr.) Peters. The May 6 meeting accidentally fell on a day when the country was celebrating the 50th Anniversary of the successful conclusion of the war in Europe. Members were asked to describe their situations when they heard of the armistice. Answers ranged from spine-tingling war stories to confessions like, "I wasn't even born yet."

Other new officers include Richard Stevens, KA0SGS Vice-President; Dick Stevens, K0IRS, Secretary; and Connie Fahnstock, W0OOP, Treasurer.

Newly elected or re-elected board members included: Ron Tinnermeir, WA0MYM; Bud Hayes, W0JFN; Walt Hayward, K0PLD; Ernie Crewdson, KD0FY; Connie Fahnstock, W0OOP.

Next meeting for NCC Chapter 143 is its annual picnic, usually held in early August. At the time of this writing the exact date had not been set. These annual outdoor picnics are catered by one of northern Colorado's favorites, Chef Kuchen.

See an associated article about Chapter 143's innovative chapter dues structure elsewhere in this issue.

Connie Fahnstock, W0OOP, Treasurer

Chapter 154, Leo Meyerson

As this is written in late July, the temperature outside here at the President's shack approaches 120° F, while inside it is a cozy 76° F or so. We are having hot weather a plenty this summer and your usual scribe, Sid Rose, W9VKC, has taken off for the seashore to get away from it all. Since the buck stops at the President's desk, here I am!

We had Chapter biannual elections in May and the results were as follows: President - Don Doughty, W6EEN; Vice President - Bob Rose, K6KRZ; Secretary - Harvey Newman, WB6JTN; Treasurer - Matt Slavin, W6LDF. These officers will serve un-



QCWA General Manager, Jim Walsh, W7LVN, presents QCWA Award to Chapter President Don Doughty, W6EEN, on behalf of QCWA President Lew McCoy, at Chapter 154 Annual Spring Luncheon in March. This event has become a QCWA Mini Convention in the Southwest USA.

til May of 1997. Sid Rose, W9VKC, will continue to serve as Net Control for our usual Thursday evening VHF net and handle Publicity (except for this monologue).

Chapter 154 has made a formal application to the "powers that be" to have the 1998 QCWA National Convention here in the Coachella Valley and to have our Chapter designated the Host Chapter. The National Convention is usually held during the last two weeks of September or the first two weeks of October and should not affect our Annual Spring luncheon which is held in February or March. It will be a busy year though.

Our monthly meetings will resume October 12th. We are now up to 88 members and growing. See you this Fall!

Don Doughty, W6EEN, President

Chapter 158, Central Arkansas

The second meeting in 1995 of Central Arkansas Chapter 158 was held on March 18, at the Baptist Medical Center in Little Rock, Arkansas. Eight members and guests attended the luncheon meeting.

Following an excellent lunch and an enjoyable fellowship session, Vice-President, John L. "Jack" Peterson, W5EKM, called the meeting to order. The major item of business was final preparations for Chapter 158 participation in the Little Rock Hamfest held on Friday and Saturday, March 31, & April 1, 1995.

It was learned in February that Chapter 158 President Bill Kiser, WM5H will be unable to attend the meetings over the next six to eight months due to health related problems. We extend our very best wishes to Bill for a complete and speedy recovery.

Our third meeting of the year was held on May 20, at the same location and had an attendance of seven members and guests.

We are pleased to announce that QCWA member, Andrew J. Clark, AC5AT (ex-KL7AHB) of Malvern has recently joined Chapter 158. Welcome aboard!

Chapter Reports, continued



Southeast Wisconsin Chapter 162 members and wives enjoy dinner at the Chapter's 8th Anniversary party in April, 1995.



Southeast Wisconsin Chapter 162, 8th Anniversary Cake, which was enjoyed at the April, 1995 Chapter meeting.

Chapter 162, Southeast Wisconsin

Our May meeting was held at the Southport Restaurant in Kenosha attended by 14 members plus several wives. W9NVK reported that the Ten-Tec HF rig recently acquired by the Chapter works well on 10, 15, 20, 40 and 80 meters using the Chapter antenna. Crystals for the WARC bands have been ordered and an antenna tuner is being considered.

The Chapter has volunteered to dispose of the ham gear from the estate of former member, Olie Fox, K9AKG (SK), at swapfests scheduled this summer. Olie's family have insisted that proceeds from sale of the gear be donated to the Chapter. Members have suggested funding an award honoring Olie with the proceeds.

Chapter members participated in providing communications for the annual Lutheran High School charity walk and reported that all went well. Members who participated in teaching the recent ham license classes reported that all participants had taken their exams and had passed at least one phase of the tests. The joint three-chapter Wisconsin, QCWA meeting is scheduled for Saturday, August 26, 1995, at Oshkosh, Wisconsin.

Our June meeting was an informal picnic at the rural home of Ken Knoff, N9NBC and XYL Marbeth, attended by 11 members and wives. Food, refreshments and pleasant weather helped make the outing most enjoyable.

No July meeting is scheduled. The annual Chapter picnic at the rural home of Larry McCalvy, WA9JMO and XYL Wendy, N9PAC is scheduled for Sunday, August 20, 1995.

Robert N. Jensen, W0WLN, Secretary/Treasurer

Chapter 168, Oregon Trail

On Saturday October 14, 1995 the Oregon Trail Chapter will hold its Fall luncheon/meeting. This will be held in the Old Country Buffet Restaurant in Portland on SE 82nd Avenue, commencing at 11:30 AM. All QCWA members and guests are invited to attend. If you plan to attend please be there at the designated time so that we may be seated as a group. If you have any questions regarding this function feel free to call me (503) 654-5101.

The past two luncheon/meetings of our Chapter have been in conflict with the meeting dates of the Beaver State Chapter 108 which holds their meetings on the 3rd Saturday of January, April, July and October. Since several members belong to both Chapters, it was decided by your Chapter President and Secretary that we select the 2nd Saturday of April and October for our luncheon/meeting dates. We feel this will increase attendance in the future meetings we have. At present we have 34 members on our Chapter roles.

Our Chapter membership ID cards will be issued shortly after the makeup and printing by our member Ron Mayer, K7BT. Please attend our next luncheon in October if you can. As usual, door prizes will be given to the lucky ticket holders. See you there.

Fred Behrman, K7LNS, Secretary/Treasurer

Chapter 181, Hudson Valley

The second meeting of the year, held on July 29, was attended by 21 members and guests at Ramada Inn, Armonk, NY. The program followed a tasty luncheon.

Our Treasurer, Stan Egelberg, W2WQK, gave a very informative account based on his and his XYL's experiences in attending a number of Elderhostel courses. He was well armed with first-hand knowledge to answer a wide variety of questions. As to his favorite of the courses taken, he cited "Flight Without Wings" as tops. It included a number of ascents in a hot-air balloon! Stan said he had met no other hams in the courses but had a lot of fun at night meeting hams in the area via his 2M hand-held.

Bill Hellman, NA2M, in our Reminisce series told how he had learned Morse code and ham technology in a high school course making it easy to pass the FCC exam. He noted a number of well known hams who had gone through the same course. Bill currently is President of NJDXA and a member of the ARRL DXAC.

Following several announcements by Dick Robinson, W2OZA, President and a lively prize drawing conducted by Harry Moore, W2JQS, the meeting was adjourned.

Dick O'Brian, NJ2J, Secretary



Ed Shaulis, W4EUM, center, holds his new QCWA certificate for having held his license for fifty-five years while Bill Price, WA4MCZ, left, President, and Roy Hill, W4PID, Secretary/Treasurer, stand by him. Photo by Bob Lane, K14V.

Chapter 182, Northeast Tennessee

Our spring meeting was held May 20, at Rolfe's Buffet in Johnson City with 12 members and 7 guests present. President Bill Price, WA4MCZ, introduced new member Charles K. Perry, WB4OZX, and expressed the group's regrets that John Owen, W4FMH, had become a Silent Key since our last meeting.

Vice President, Bill Owen, W4VS, gave a report on our Sunday night net, which is called at 9:00 PM on the 147.60/147.00 Blountville, WA4CBX/R. He also mentioned the Old Old Timers' Net that meets following the QCWA net, discussed the new FCC rules for issuing club and vanity call signs, and announced that the chapter has applied for a club call sign. It was also announced that Forrest Pilgrim, Jr., is planning to ask for his father's call - W4JD. Bill Drayer, KQ4DD, who is net control for the Old Old Timers' Net, then said a few words about that net. It is for those who have been in radio forty years or more; and types of radio other than amateur (such as Civil Air Patrol) are acceptable to make up the forty years.

Ed Shaulis, W4EUM, was presented a QCWA certificate for having held his license for 55 years.

The program, presented by President WA4MCZ, was a very interesting National Geographic Explorer video tape of the adventures of Ernest Shackleton in the early 1900's. Shackleton led an expedition to Antarctica aboard the ship "Adventurer," which became caught in the ice and was eventually crushed. It was an almost unbelievable story of survival of his entire crew of more than 20 men for almost two years.

Our next meeting will be our Annual Meeting, probably in October, at which officers to serve the next two years will be elected.

Roy O. Hill Jr., W4PID Secretary/Treasurer

QCWA Honor Awards

QCWA Hall of Fame

- 1980 Ray Meyers, W6MLZ
- 1981 Bill Halligan, W9AC
- 1982 Barry Goldwater, K7UGA
- 1983 Jean-B. Wolff, LX1JW
- 1984 Don Wallace, W6AM
- 1986 George Sterling, W1AE
- 1987 Vic Clark, W4KFC
- 1991 Richard Baldwin, W1RU
- 1994 Leo Meyerson, W0GFQ

Roll of Honor

- 1981 John DiBlasi, W2FX
- Gus Girona, W2JE
- 1985 Bud Waite, W2ZK
- 1986 Earl Thomas, W2MM
- Ralph Barber, W2ZM
- 1987 Ethel Smith, K4LMB
- 1989 Leland Smith, W5KL
- 1993 Al Kahn, K4FW
- Frank Gunther, W2ALS

Member of the Year

- 1979 Ed Trombley, W8CAM
- M.W. McRae, W9RC
- 1981 Lew Sieck, K4NE
- 1982 Herb Gleed, W6FQ
- 1984 Bert Gunn, W5FU
- 1991 Leo Meyerson, W0GFQ

John DeBlasi Award

- 1984 Hal Sears, W5NC
- 1986 Owen Garriott, W5LFL
- 1988 Clarence Seid, W2KW
- 1989 Frank Lester, W4AMJ
- Ralph Hasslinger, W2CVF
- Irving Groves, K4HT
- Nat Burnett, K4OL
- Moe Joffe, W6PHE
- Robert Baird, W9NN
- 1992 Art Milligan, W8KW

Distinguished Service

- 1975 A.L. Walsh, W2BW
- 1979 Mark Devaney, K4IDC
- 1988 David Talley, W2PF
- 1989 Hugh Turnbull, W3ABC
- Fred Hammond, VE3HC
- 1990 Herb Gleed, W6FQ
- 1991 Esther Given, W6BDE
- 1992 Art Monsees, W4BK
- Ted Heithecker, W5EJ
- Stuart Meyer, W2GHK

Presidential Award

- 1988 John D. Kraus, W8JK
- Byron H. Goodman, W1DX
- H.H. Beverage, 2BML
- 1989 John Huntoon, W1RW
- Stewart S. Perry, W1BB
- M. Walter Maxwell, W2DU
- 1990 Bruce L. Kelley, W2ICE
- 1991 Dave Bell, W6AQ
- Armin Meyer, W3ACE
- Noel Eaton, VE3CJ
- Ed Tilton, W1HDQ
- Roy Neal, K6DUE
- 1992 Laird Campbell, W1CUT
- Richard C. Kirby, W0LCT
- 1993 Katashi Nose, KH6IJ
- William Tynan, W3XC
- Carole Perry, WB2MGP
- 1994 George Hart, W1NJM
- Phil Rand, W1DBM

Nominations for Honor Awards

Once each year the Board of Directors of QCWA reviews the nominations of members for the Honor Awards and, by vote, selects those considered to be worthy of receiving awards. QCWA members are encouraged to participate in this activity by preparing and submitting nominations.

W5XX on 160

by Malcolm P. Keown, W5XX
14 Lake Circle Dr.,
Vicksburg, MS 39180

Prior to WW II 160 meters enjoyed great popularity among hams interested in relatively short-range communications. However, several happenings immediately after WW II eventually turned the "Top Band" into a ham radio wasteland. First of all, much of the pre-WW II 160 meter band as well as spectrum space immediately above and below 160 were allocated to LORAN in order to provide a military and commercial world-wide radio navigation system. Secondly, as hams experienced a record sunspot peak in 1957, the Top Band was forgotten. Short range communications could be handled on 80 meters with antennas only half the size of a 160 antenna and with less noise and more reliable daylight communications; further, some hams interested in short range communications were moving to another useless part of the spectrum . . . two meters. Thirdly, and probably most important, the Novice Class license was made available by the FCC in the early 50's. In an effort to market affordable kits to the avalanche of predominantly teenage newcomers such companies as Heath, Johnson, WRL and Knight conveniently left 160 out of their transmitter designs because larger coils and capacitors were needed, and Novices had no 160 meter privileges anyway. Thus, a whole new generation of hams hit the airwaves (including KN4RIN, now W5XX) that had no idea any usable spectrum space existed between the top of the broadcast band and the low end of 80.

Even for "Olde Timers" 160 was not now a very attractive band to operate. In order to not interfere with LORAN, the FCC required that hams operating on 160 run drastically reduced power. In addition, operation on the Top Band was confined to 1800 to 1825 kHz in the eastern and midwest reaches of the U.S. and 1975 to 2000 kHz on the west coast. Powers were generally limited to 200 watts in the daytime and 50 watts at night unless you were unfortunate enough to live near some parts of the Gulf Coast where no operation was allowed at all. Thus, if you happened to tune across 160 during the winter in the late 50's you would probably be lucky to hear a couple of AM heterodynes.

As the '50's rolled into the '60's, the predictable occurred. . . the sunspots went away. And as the winter sun set earlier and earlier and the nights became longer a strange thing happened . . . the MUF began to drop below 7 MHz. All that was left for the 75 watt CW-only ex-novice (now conditional) crowd was a very busy 80 meters. There had to be more than this to the teenage ham electromagnetic lifestyle. (Now remember this was before the days of the PC and the slide-rule was truly a wonder to a high school student.) One day K4RIN wandered up one of the hills in East Tennessee near Chattanooga to visit a knowledgeable Olde Timer to tell him about his electromagnetic problems. . . in particular, just a few short months ago during the 1957 sunspot peak and the good years thereafter, K4RIN worked Europe every morning and VK/ZL every afternoon as a daily routine. . . and now he was lucky to work an occasional European on 20 when the band was just right. The Olde Timer pondered the problem. . . "how about giving 160 a try?" . . . "160 what?" K4RIN quickly replied. The Olde Timer



The author with his first 160 meter rig that he homebrewed as a teenager.

went on to explain about the glory days of 160 before the war . . . and how he worked Oregon one time running only 250 watts AM. K4RIN went away from the shack of the Olde Timer wondering if there was at least one more frontier for the local teenage conditionals to conquer. (For those youthful readers who don't recognize what the word conditional means, it was the FCC license class equivalent to general, which could be obtained by mail examination, provided the prospective conditional lived over 75 miles from the nearest FCC examining station.)

After discussing the possibility of exploring the new 160 frontier, K4RIN and his high school conditional colleagues decided to try a little tuning around on their all-band receivers to see if they could hear anything besides LORAN on 160. Sure enough, there were a few AM signals and even an occasional CW signal, but most important, there seem to be plenty of wide open spaces in the 25 kHz slot. Too bad nobody had a transmitter that would work 160. . . thus the "homebrew" bug bit the teenage ham radio crew.

Could a 160-meter transmitter actually be built out of junk box parts. . . in this case meaning mostly parts scavenged from early 1950 era black and white TV's. There was some consideration toward modifying existing rigs, but this was considered as being highly risky since 160 meter construction was on the cutting edge of 1960 high school level technology.

Building a home brew rig for 160 was somewhat of a technical challenge for the local teenage conditional crowd since there were no helpful articles in the journals. . . everything was about the wonders of SSB. Forget that. . . most of the teenagers were glad to get a new transmit crystal once a month. After some consideration, the teen technical wizards decided to duplicate the Knight T-50 CW rig except that all the induc-

ISRAEL

4 X 4 N J

QSO WITH	DATE	GMT	MHZ	RST	2 WAY
W5XX	20-24-85	0236	1.8	579	CW

QTH:
RIKI KLINE, 4X4NJ
GAN YAVNE 70800
ISRAEL

73 and DX
Riki

TMX
QSL MANAGER:
Kappy
KAPPY, WA4WTG

A QSL card from Israel, a long haul on 160!

tances and capacitances in the tuned circuits would be doubled. The only problem was finding appropriate transmit crystals since the teenagers couldn't even spell VFO. Fortunately JAN Crystals had such critters for 99 cents plus postage.

In a month or so three "6AG7 driving an 807" rigs were illuminating 40 watt light bulbs. Only one problem remained. . . . what about the antenna system, seeing that a 160 meter dipole was over 250 feet long. The easiest solution was to press the faithful 80 meter dipole into service fed by a tuner against ground. All was now prepared for local testing, although the teenagers were not all that optimistic about future long-distance communications, remembering that Marconi had to use no telling how many kW of spark and giant antennas just to get a weak "s" from England to Newfoundland at 3000 kHz.

The conditionals quickly found that reliable local communications up to 12 miles were possible at any time during the day or night. Local skeptics told them that if they had wanted to try a novel communication mode they could have spent their time more productively trying to load audio amplifiers into the ground (which had already been tried and worked up to 500 feet). The local 160 testing commenced in September of 1960. By early October weak signals from up north were being heard on 160, but alas no response to the teenagers' calls from East Tennessee. Finally in late October one of the locals (not K4RIN) broke through to a station in Ohio with 569 both ways. The race was on. By Christmas some local stations had worked over 20 states on 160. . . . and even Canada.

With the 1961 CQ 160 Meter Contest on the January horizon, K4RIN decided to take decisive action to get a few dBs jump on the locals. With the cooperation of part of the neighborhood, he put up a full-sized 160 meter inverted vee at 40 feet. . . . what a cloud warmer. After two gruelling nights of the contest he had made 111 contacts in 25 states, Canada, Venezuela and Bermuda. He had totally crushed the local opposition. Although he was accused of all kinds of unethical contest practices by the local losers, he realized an eternal truth. . . . DX still lived even though the sunspots were gone.

Time passes . . . the local Chattanooga 1490 AM broad-

cast station claims it has eliminated the strange clicks occasionally heard on its signal. . . . coincidentally most of the local 160 teenagers had gone off to college to study electrical engineering, physics, political science (?), ping-pong and girls . . . not necessarily in order of dedication. Occasional visits to 160 indicated that activity continued to grow, and it was rumored that W1BB had over 75 countries confirmed on the Top Band. Amazing . . . Europe had never even been heard in East Tennessee much less worked. Of course, W1BB's QTH was at Boston Harbor with a 275-foot high dipole over salt water.

More time passes. . . I find myself out of college, married and living in Mississippi. Wonder how 160 is doing? W1BB got his DXCC and Yaesu has introduced the FT-101 which among other features has 160 meter capability. This is a first. . . I've got to have one. . . . so in the fall of 1970, I get the 476th FT-101 one off the

boat. I now have room to put up a 160 meter Windom with a 50-foot vertical feeder section. DXCC here I come. Well not quite. . . by 1975 I'm up to 15 countries and 48 states worked (KH6 and KL7 missing of course). . . I did hear England once.

1981 rolls around. . . I change QTH's in Vicksburg because of an expanding family. . . actually because of the availability of an economically attractive 250 x 550 foot lot that slopes downhill towards a lake and Europe. Reading the words of the wise ones makes me believe I must put up a big vertically polarized antenna if I ever want to realize any measure of success on 160. Up goes a 120 foot tower (with a four element 20 meter monobander for a top hat) to which I quickly attach a half sloper. The winter of 1985 arrives. . . . to my surprise I hear several Europeans. . . . to my utter amazement I manage to work a few of them with 100 watts and the sloper. My appetite is whetted now. Sixteen 135 foot radials are buried in the yard and lake radiating out from the base of the tower (a six month effort). The sloper comes down and the tower is gamma matched. The faithful Clipperton linear is severely modified to provide 1500 watts output on 160. Finally, a beverage is put up at six feet so I can hear through the Gulf Coast QRN.

Now with all of this hardware in place, it should be possible to work some DX. Sure enough, I hook up with KH6CC and KL7Y to complete WAS. By learning to watch the gray line passing over Asia and Europe I can work deep into Europe and Southwest Asia. Israel, Armenia and Romania are no problem. By the Spring of 1987 107 countries are in the log. Getting all the QSLs proves to be somewhat of a problem but the DXCC certificate finally arrives in 1989. What have we proved here? That the answer to all ham radio challenges is vertical steel and horizontal aluminum sprinkled with a few 572B's . . . not so. . . what is clear is that all challenges take a while to work through but for those that persevere, success will eventually be realized. . . granted that 28 years off and on 160 to get DXCC is somewhat of an extreme. So what next. . . 200 counties on 160. . . or how about a real wild hair. . . during the last WARC it was suggested that hams be given 25 kHz below the broadcast band in the 1750 meter experimenters band. Anybody want to start a letter writing campaign to the IARU? W5XX

Advance Registration

1995 QCWA National Convention

Manchester, New Hampshire

October 13-14, 1995

Hosted by Yankee Chapter 112, Pine Tree Chapter 134
Twin States Chapter 146, Nutmeg Chapter 149
and Pioneer Chapter 183

Center of New Hampshire Holiday Inn
Elm St., Route 3, Manchester, NH

(75 rooms have been reserved at \$68, single or double. These rooms are not available through the 800 phone number so call 603-625-1000 or write the hotel direct, mentioning QCWA for the special rate. Cutoff date is September 20.)

Name....., Call Spouse/Guest:
Street address.....
City.....State.....Zip..... Call.....

Registration

QCWA Member.....\$10
Guest(s).....\$2

(Note: You must register to attend functions listed below.)

Saturday buffet breakfast.....\$11
Saturday banquet, Chicken Cordon Bleu.....\$21
T-bone steak, sauce Chasseur\$23.50
(cocktail hour 6:00 PM to 7:00 PM, cash bar)
Friday tour (foliage, luncheon, pines/mall).....\$27
Saturday tour (luncheon, seashore, historic Portsmouth).....\$27
Sunday special brunch.....\$15
Total \$.....

Make checks payable to Charles Walbridge, QCWA Convention Account. Mail this form and remittance to Charles Walbridge, K1IGD, 6 LaCleda Ave., Framingham, MA 01701. (For more information telephone 203-668-0845.)

National Convention Update

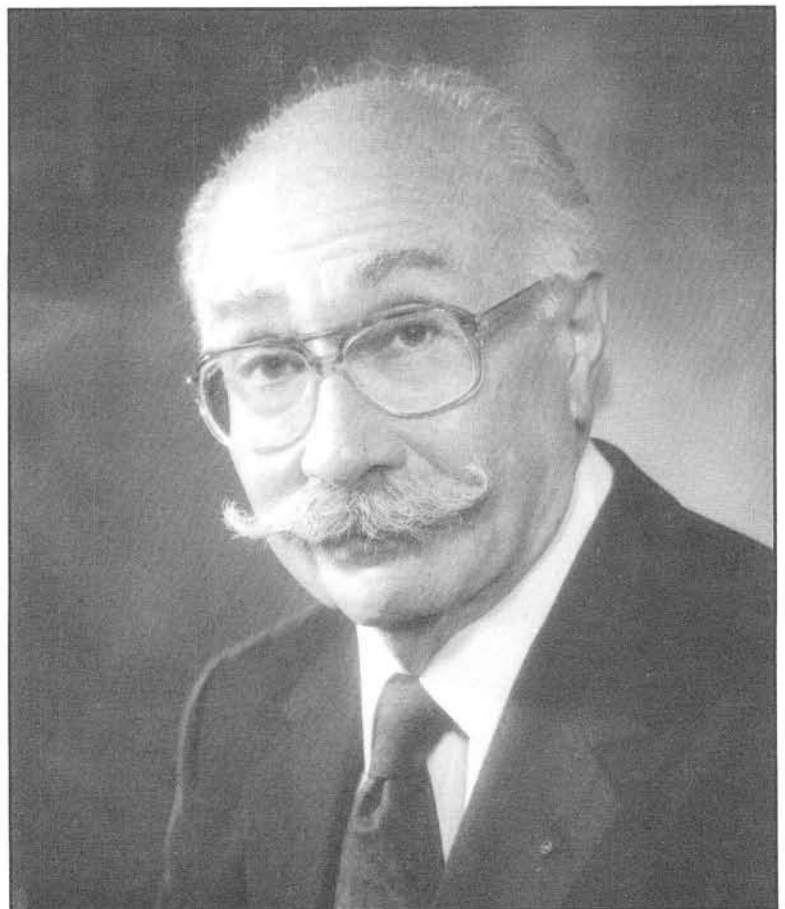
Statue of Liberty Renovation Chief Engineer is Banquet Speaker **W2MM in Full Operation** **Open Forum** **Friday Night Sing Along** **Tours**

Last call for advance registration at the 1995 QCWA National Convention scheduled on October 13th and 14th at the Holiday Inn in Manchester, New Hampshire. Five New England chapters have joined forces as hosts to make this a memorable meeting. We are pleased to announce a change of plans in that the banquet speaker will be Edward Cohen, chief engineer on the *Statue of Liberty* renovation, as well as on many other projects including extensive experience with antennas (e.g. the Arecibo radiotelescope).

The QCWA Board will convene on Thursday, but break on Friday morning for an open forum - bring your questions and comments. ARRL Executive Vice President Dave Sumner, K1ZZ, will host a League discussion. Dick Baldwin, W1RU, as IARU President, will tell us about happenings in the international regulatory arena. Technical presentations will include antennas, baluns, packet and more antennas. Covered bridges and herbs are subjects aimed at the distaff side. Visit nearby Cushcraft on your own Friday.

Our hospitality room will be open as early as Wednesday evening, and W2MM will be in full operation there (bring your ticket!). Registration desk will be open commencing 2 PM Thursday. (Walk-ins, too, will be welcomed.) On Friday join the traditional Sing Along, starring our own Leo Meyerson, WØGFQ. Tours are filling up, the foliage trip on Friday, and the "taste, tour, and shop" excursion on Saturday, both including luncheon - don't miss out.

For more details, see the announcement in the Summer Journal.



Banquet speaker Edward Cohen, Chief Engineer on the Statue of Liberty renovation.

Product Review

We Look at the Tucker T-3000 Transmatch

by Lew McCoy, WIICP, 1500 Idaho St., Silver City, NM 88061

The Tucker T-3000 Transmatch is equipped to handle the legal limit and for all practical purposes, has an unlimited matching range. The circuit uses a very tried and tested T configuration that has been extremely successful for many years. Let's get the specifications out of the way and we'll discuss the circuit in detail. The unit measures 5.5 inches high, 12.5 inches wide, and 12 inches deep including terminals. It weighs 10 pounds. As to power, it handles 1000 watts key down continuous and 1500 watts p.e.p. Its tuning and matching range is from 1.8 through 30 MHz.

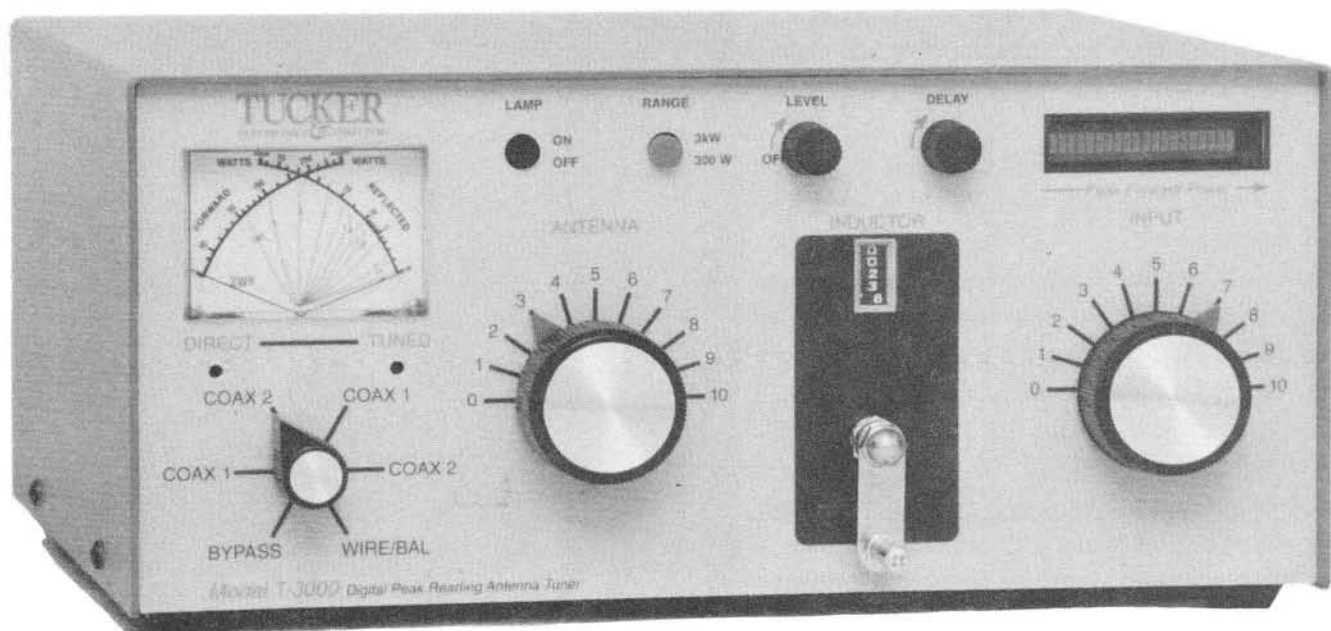
The T-3000 is equipped (switched via front panel switch), to handle several different antennas. There are two SO-239 terminals for either of two coax fed antennas. There are also terminals for either a single end-fed wire or for balanced feeders. These are also switched from the front panel. The controls consist of input tuning and antenna tuning variables, which are a part of the T configuration. Also, the inductance used for matching is a 28 uH Delrin roller inductor. It is controlled by a counter dial which has a very smooth action.

There is a dual D'Arsonval cross-needle meter for SWR readings and a bargraph power display. These readings will show both power and SWR. Also on the front panel near the meter is a range switch, two-position, which permits full scale reading of 300 or 3000 watts. The bargraph display shows the power level being transmitted on either sideband or CW. There is also a delay switch which controls the speed of the bargraph display.

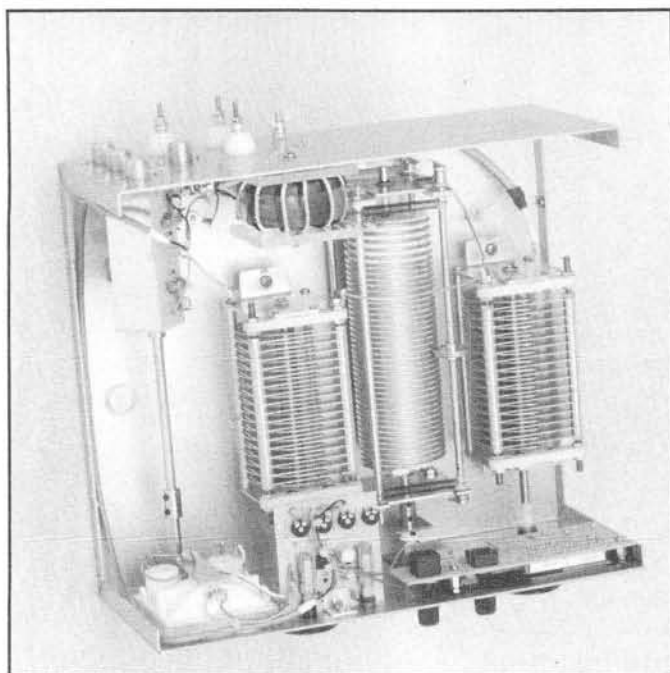
The rear panel has several connections: there are four SO-239 connectors, one fitting for antenna one, another for antenna two and a third, which is used for bypass, or a dummy load, or even a third coax-fed antenna. The fourth terminal is for input from the exciter. There are three isolantite standoffs for either balanced line or single wire end-fed antennas.

The instruction manual is quite detailed and clearly written. There is a chart provided for one to write down the settings for any given antenna.

Having been one of the originators of this particular circuit, which is an offshoot of the Ultimate Transmatch, when I did the original design, I made many checks as to tuning and matching range and, most important, efficiency checks. To be very honest, I never came across an antenna load I could not match. Some very high SWR loads took careful tuning but they all came up with a 1 to 1 match. To test this tuner, I placed a Bird Wattmeter (a first-class instrument) on the input to the Transmatch and for a load on the output of the Transmatch, I had a coax fed vertical that went to over 10 to 1 SWR on 80 meters. On the output, in the coax to the antenna, I inserted an RF Application power reading bridge - another outstanding instrument. I started out with 100 watts and adjusted the Transmatch for a 1 to 1 match. The Bird, which was on the input, read 100 watts. (I might add that while I didn't depend on the built-in power and SWR meter in the Transmatch, the readings agreed perfectly with the Bird.)



This is the front view of the T-3000. At the left is the SWR/Power meter and just below, the antenna switch. At the upper right is the bargraph indicator.



This shows the interior of the Transmatch. The layout of the components is clean and neat. The toroidal transformer for balancing feed is mounted on the rear wall. The terminals on the rear exterior are all capable of being switched from the front panel.

So I now had a matched tuner, but with a load that was 8 to 1. And I might add, an 8 to 1 mismatch is considerable. I then switched on the RF Applications Bridge and it read right at 100 watts, maybe a shade less but any difference was not worth writing about. Next step was to put the big shoes to the circuit. I turned on the amplifier and tuned up to 1500 watts input (this was a key-down reading or the peak of a peak-to-peak reading.) The Bird showed 1500 watts in as did the built-in meter. I then turned on the RF Applications unit and it showed - just very close to 1500 watts! I ran key-down for several minutes and shut the rig off. I very carefully felt all the components in the Tucker T-3000 but nothing, and I do mean nothing, even felt warm. Needless to say, I made many other tests with even much higher SWR readings and I was more than satisfied.

There are a couple of more points that need mentioning. This circuit will match a load with high SWR and do so with several different inductor and capacitor settings.

Without going into great technical details it is important that you always use the matching point, SWR 1 to 1, that has the most capacitance in each of the two tuning capacitors. You can get extremely high Q settings under some matching conditions "which mean that voltages will be developed and one could have arcing".

Don't misunderstand - I didn't have such condition with this tuner but I have had them in the past when running high power.

The Tucker T-3000 is a very fine unit. I was much impressed with the quality and its ease of operation. I have many antennas up here and some with feed line loads of very high SWR. In all cases, the T-3000 handles them with ease.

The Tucker T-3000 lists for \$349. It is distributed by Tucker Electronics, 1801 Reserve St., Garland, Texas 75042, (800) 559-7388. [W1ICP](http://www.w1icp.com)

Your Official QCWA Badge



Many of you have asked and now we have an official QCWA Badge for you to wear at amateur functions. **It is white with black letters** and the above is an actual size reproduction. This badge is totally engraved, no 'hot press', and so it should last a lifetime.

The order blank is printed below. It comes with a standard clip and a bolo clip.

Note that you may order it with a pocket clip at an additional cost

Bolo ties are also available.

QCWA Badge Order

Call _____

First Name _____

Last Name _____

Indicate whether you want your City/State or your Chapter name and Number as bottom line on badge.

1. City and State

_____ **OR**
2. Chapter Name and Number

Badge..... \$7.00

Pocket Clip (\$2.00).....

Bolo Ties (\$2.50).....

Bolo tie color(circle one): Black, Blue,
Brown, Green, Red and White.

Total Cost.....

Complete in full and mail with your check to:
QCWA, 159 East 16th, Eugene, OR 97401-4017

New Members

DATE	Number	NAME	CALL	CITY	STATE	SPONSOR
05/23/95	27530	ROBERTS, MARGARET L	K4GKL	BRISTOL	VA	W A OWEN, W4VS
05/24/95	27531	PAYNE, HOWARD	WA4IHJ	BRISTOL	VA	W A OWEN, W4VS
05/25/95	27532	COLEMAN, KENNETH E	KB8PTT	HUNTINGTON	WV	DAVE PAVEL, AE7B
05/25/95	27533	JORDAHL, JOSEPH S	KB3IE	HENDERSONVILLE	NC	
05/25/95	27534	HANSON, ROBERT	WB2DHL	MINETTO	NY	WALT BRINK, W3WPY
05/25/95	27535	STEWART, CLARK L	W8TN	RAVENSWOOD	WV	WALT BRINK, W3WPY
05/26/95	27536	AUGUSTINE, RAY C	K8AGO	NORTHVILLE	MI	ALCIAMPAGLIA, W3VSD
05/26/95	27537	BABCOCK, THOMAS H	K8VPS	MIDDLESEX	NC	
05/26/95	27538	HUBBARD, CRAIG A	N2DLJ	SOUTHAMPTON	NY	RALPH G. THORN, N2KEA
05/26/95	27539	MARTIN, FRED P JR	K5JJW	GROVES	TX	
05/26/95	27540	SHEPHERD, PAUL L	N4PBH	SODDY-DAISY	TN	BILL STOTT, W4XK
05/26/95	27541	WEBB, JOHN THEODORE	AC4CS	GREENVILLE	SC	
05/30/95	27542	BLANKE, DEBRA	KG6UI	MILPITAS	CA	
05/30/95	27543	LACKEY, CHARLES R	W4QBE	LAKEMONT	GA	
05/30/95	27544	CROSS, FREDERICK E	VE3DVI	ST CATHARINES	ON	GOERGE SPENCER, VE3AGS
05/30/95	27545	HUFFHINES, ELMER E JR	W5HRU	PORT ARTHUR	TX	NORMAN HELMS, K5SAC
05/30/95	27546	OTTERSTAD, RAGNAR	OZ8RO	BIRKEROD,	DENMARK	
05/30/95	27547	ROBINSON, DONALD G	KØDXT	BELMOND	IA	ART ELLIS, KBØBET
05/31/95	27548	BECHTOLDT, JOHN R	WB9FHL	O'FALLON	IL	
05/31/95	27549	BIRKE, HERBERT	DL6DTW	GOBRISCH,	GERM.	ERNST KROG, DL6II
05/31/95	27550	KOSCHE, WALTER	DL3JCN	CHEMNITZ,	GERM	JANS-J HAUTSCH, DL1JOE
06/01/95	27551	VELTMAN, PAUL	WA6OKQ	FREMONT	CA	RICHARDASTALLS, K4KYO
06/02/95	27552	SCHERER, THOMAS	WB2IIS	WILLIAMSVILLE	NY	ROBERT ROONEY, W2AET
06/02/95	27553	WEAVER, DONALD C	KO4YO	MARIETTA	CA	JUD WHATLEY, W4NZJ
06/05/95	27554	ISHMAEL, DAVID WESTON	WA6VVL	COSTA MESA	CA	
06/05/95	27555	WEAVER, ALLAN G	WØPTU	FORT COLLINS	CO	
06/05/95	27556	GIBBS, VONDELL	W7HXE	BREMERTON	WA	
06/05/95	27557	GORT, CATHY	W7JVI	LAKE STEVENS	WA	
06/05/95	27558	HOLMEN, ROGER A	AJ7J	HILLSBORO	OR	
06/05/95	27559	PERKINS, LEONARD RAY	K7IU	GRESHAM	OR	
06/05/95	27560	PARK, JOSEPH	WB6AGR	LAYTONVILLE	CA	
06/05/95	27561	PHILLIPS, RANDALL I	W7HTU	TACOMA	WA	
06/05/95	27562	POSEY, BOB	WA7UHH	REDMOND	WA	
06/05/95	27563	WEBB, ROBERT F	WB6EUH	TENINO	WA	
06/05/95	27564	MC CASLAND, BEN H	WA5PTE	HAUGHTON	LA	ROGER LEY, WA9PZL
06/05/95	27565	MULLIN, JAMES E	W8KKK	EUCLID	OH	R. ZIMMERMAN, W8UYN
06/05/95	27567	TURNER, BRIAN B	K2SJM	HERNDON	VA	
06/06/95	27568	NICHOLS, ROBERT P	7J3AAL	HARIMA YAMASAKI	JAPAN	
06/06/95	27569	ODELL, JOHN	WØZOU	SEWARD	NE	JOHN MC KINNEY, WØAP
06/09/95	27570	COILE, RUSSELL C	KØ6IA	PACIFIC GROVE	CA	PHIL KELLEN, K6CJ
06/09/95	27571	RIESE, BOB	K3DJC	YORK	PA	RAY STRAUB, W3AXC
06/12/95	27572	DEERY, JACOB R JR	N3CTK	SOUDERTON	PA	JOHN FEDYNA, W2WZG
06/12/95	27573	FULCHER, JOHNNY D	W5LII	OKLAHOMA CITY	OK	RAY LONG, W5TY
06/12/95	27574	PROUSE, FRANCIS H	VE3FHP	GUELPH,	CANADA	FRED HAMMOND, VE3HC
06/12/95	27575	SESSIONS, CLAUDE JR	K5HFY	SUGAR LAND	TX	TOM SELLERS, K5CNU
06/12/95	27576	TYSZKA, MATTHEW JR	WA1HRE	COLLINSVILLE	CT	MILT CHAFFEE, W1EFW
06/12/95	27577	ZWIEBEL, LESLIE	WB6ORZ	MENLO PARK	CA	JOHN G TROSTER, W6ISQ
06/13/95	27578	CARLIN, JIM W	WB4CPU	NASHVILLE	TN	G BRYSON LEWIS, W4JYV
06/14/95	27579	JONES, HUBERT C	KB4PO	CONYERS	GA	JUD WHATLEY, W4NZJ
06/15/95	27580	CRAMER, JOHN J	WR8F	TRENTON	MI	B.M STONER, K8ZJU
06/16/95	27581	BUZZARD, MILDRED A	K3JGS	DELAWARE W. GAP	PA	ERNEST TRANSUE, W3MDO
06/16/95	27582	KOLTZ, JORDAN	W1TOU	HOLYOKE	MA	M.W LUDKIEWICZ, W1DGJ
06/16/95	27583	PAPSKI, EDWARD C	W1UKC	BURLINGTON	MA	JOE SANTANGELLO, N1JS
06/16/95	27584	STOLL, ERIC D	K2TO	TEANECK	NJ	
06/19/95	27585	RIDINGER, RICHARD E	W6ZPE	CHINO HILLS	CA	DON MEADOWS, N6DM
06/19/95	27586	BETHEL, WILLIAM C	KS4VV	SEBASTIAN	FL	

DATE	Number	NAME	CALL	CITY	STATE	SPONSOR
06/19/95	27587	SWARM, ROBERT E	N3UDR	CORRY	PA	
06/20/95	27588	MC FALLS, ROBERT D	KR4PB	SUMMERVILLE	SC	BRYCE N MYERS, K4LSF
06/20/95	27589	QUAYLE, STANLEY F	N8SQ	COLUMBUS	OH	
06/21/95	27590	PENDER, ROGER D JR	N6GL	DOWNEY	CA	
06/22/95	27591	FLYNN, JOHN P	KE6MT	LONG BEACH	CA	
06/22/95	27592	HOLLOWAY, ROBERT G	W4USQ	TAMPA	FL	
06/22/95	27593	MARINEAU, PATRICK E	K9HF	ST LOUIS	MO	
06/22/95	27594	STEIN, ROBERT F	WA2HZS	NEW YORK	NY	
06/25/95	27595	TUCKER, ALLISON C SR	WA5RIX	DALLAS	TX	LUTHER S PULLY, W5JIZ
06/25/95	27596	NIX, PAUL N	WB5AGF	GARLAND	TX	JOHN KING, K5CDV
06/25/95	27597	COOK, KENNETH M	N5RVK	HUMBLE	TX	JACK DYE, W5TPU
06/25/95	27598	CIARACHI, FRED FRANCIS	AA5MN	DUNCANVILLE	TX	JACK DYE, W5TPU
06/25/95	27599	DENNIS, CHARLES T	WA5ZTD	GARLAND	TX	JOHN KING, K5CDV
06/25/95	27600	HARDING, ART	K5YEF	PLANO	TX	JACK DYE, W5TPU
06/25/95	27601	MUSCANERE, JOE	WATHNK	PEARLAND	TX	JOHN KING, K5CDV
06/25/95	27602	RIEHL, DAVID J	AF5B	DALLAS	TX	JACK DYE, W5TPU
06/25/95	27603	SALAS, PHIL	AD5X	RICHARDSON	TX	JOHN KING, K5CDV
06/25/95	27604	WILKINS, MICHAEL E	WB5BLF	RUSSELLVILLE	AR	LUTHER S PULLY, W5JIZ
06/27/95	27605	GILBERT, RAY T	K7VQF	SEQUIM	WA	
06/27/95	27606	HUBBARD, ALAN D	WB9SAX	LOS ALTOS	CA	
06/27/95	27607	KURDEKA, PETER L	N1ASJ	SUN CITY CENTER	FL	L.WITKOWSKI, WA1EDR
06/27/95	27608	LAUGHTER, JAMES A	N4ID	RICHARDSON	TX	LUTHER S PULLY, W5JIZ
06/27/95	27609	STOLARIK, JOHN D	K3CLG	HYATTSVILLE	MD	HUGH A TURNBULL, W3ABC
06/27/95	27610	WILLIAMS, DARRELL F	K0KW	MARION	IS	
07/03/95	27611	ASHLER, PHIL JR	N4IPH	TALLAHASSEE	FL	JACK CALE, W4GOV
07/03/95	27612	SCHWARZ, ALFRED A JR	ND2K	HOWELL	NJ	
07/03/95	27613	VANDERSLICE, JANE	N6NTB	SUN VALLEY	NV	
07/03/95	27614	VERALDO, GEORGE	WB2BAU	NORWOOD	NY	HENRY E. KILLETS, W2CFY
07/03/95	27615	BROWN, DAVID W R	N3KOQ	SUN CITY CENTER	FL	LORRAINWITKOWSKI, WA1EDR
07/03/95	27616	YOUNG, JIM	K9YKL	TABERNASH	CO	
07/05/95	27617	KIMBLE, JERRY W	WB9BSH	ANTIOCH	TN	
07/05/95	27618	KUWADA, TAKEO	KH6DFW	KAILUA-KONA	HI	DEAN MANLEY, KH6B
07/05/95	27619	OPPENHEIMER, JOHN C	KN5L	PLANO	TX	
07/05/95	27620	TUCKER, RONALD E	K5IGB	YUKON	OK	
07/06/95	27621	HAMLET, DOLORES	WA2YPL	UNIONDALE	NY	CARROLL HAMLET, W2QBR
07/07/95	27622	BOGACKI, FRANK J	K3QJE	ERIE	PA	G PAUL GERBRACHT, W3QPP
07/07/95	27623	SMITH, BILLY JR	W4HNV	LAS VEGAS	NV	LELAND SMITH, W5KL
07/07/95	27624	CROKE, WARREN B	AE4IS	GAINESVILLE	FL	GARY LILJEGREN, W0SH
07/07/95	27625	FRANCIS, LEVERETT	K4SRA	KEYSTONE	FL	GARY LILJEGREN, W0SH
07/07/95	27626	JOHNSTON, H WALTER	W4TKE	GAINESVILLE	FL	
07/07/95	27627	HUNN, JAMES EUGENE	K9DLE	GAINESVILLE	FL	GARY LILJEGREN, W0SH
07/07/95	27628	KOENIGSTEIN, NICK J	WB9ELP	GAINESVILLE	FL	GARY LILJEGREN, W0SH
07/07/95	27629	WELLS, WILLIAM J	K4RDP	HIGH SPRINGS	FL	GARY LILJEGREN, W0SH
07/10/95	27630	BENGTON, ALVIN H	AA9DM	NAPERVILLE	IL	
07/10/95	27631	DEVILBISS, JAMES V	WA3FUJ	FREDERICK	MD	GARY HARRISON, WA0RWS
07/10/95	27632	DOTY, THEO B	AA5CK	CHEYENNE	OK	
07/10/95	27633	LAPKIN, HENRY E JR	K6HDL	HILLSBOROUGH	CA	
07/10/95	27634	WALKER, LLOYD	W0QMH	LINCOLN	KS	HARVEY TEWES, WA0OZP
07/12/95	27635	WENDELL, ROGER J	WB0JNR	AURORA	CO	
07/13/95	27636	APLEGATE, DAN	KE3KF	MURRYSVILLE	PA	
07/13/95	27637	PARKS, DAVID R	VE3AV	OTTAWA	ON	
07/13/95	27638	VALVO, JO ANN	WB8UWO	TOLEDO	OH	DOROTHY W HIGGINS, W8RZN
07/15/95	27639	WITKOWSKI, CHESTER	N8SJD	IRONS	MI	
07/17/95	27640	BELL, KENNETH K	KH6AFQ	HILO	HI	DEAN MANLEY, KH6B
07/17/95	27641	CALLAWAY, EDGAR H SR	N4EC	GAINESVILLE	FL	GARY LILJEGREN, W0SH
07/17/95	27642	CALLAWAY, PATRICIA ANN	K4HFJ	GAINESVILLE	FL	GARY LILJEGREN, W0SH
07/17/95	27643	HALLQUIST, CHARLES E	WH6XV	KEAU	HI	DEAN MANLEY, KH6B
07/17/95	27644	KLAWITTER, CHARLES O	W9VZR	MILWAUKEE	WI	
07/17/95	27645	MILLER, EDWIN JAMES	W7GMH	KEAAU	HI	DEAN MANLEY, KH6B
07/17/95	27646	SMITH, CLARENCE E	AH6NV	KEAAU	HI	DEAN MANLEY, KH6B
07/17/95	27647	REYNOLDS, LLOYD	W5QCN	HALTON CITY	TX	JACK DYE, W5TPU
07/18/95	27648	WARD, VERNON L	K7FH	MEDFORD	OR	

New Members, continued

DATE	Number	NAME	CALL	CITY	STATE	SPONSOR
07/19/95	27649	MILLS, PHILIP L	AB5TH	FRIENDSWOOD	TX	
07/19/95	27650	VANDAGRIFF, TIM	WA5YOM	ARDMORE	OK	D J BABIN, K5KQG
07/20/95	27651	JUEN, PAUL	WE0Q	VERGAS	MN	
07/24/95	27652	CONNA, DANIEL	WF2R	PLATTEKILL	NY	
07/24/95	27653	COVELLI, JEFFREY J	WA8SAJ	WILLOUGHBY	OH	
07/24/95	27654	JACQUINOT, M MARK	WA0KIR	LITTLE NECK	NY	
07/24/95	27655	BEAVIN, PAUL	K4LRJ	ATLANTA	GA	CHAPTER 49
07/24/95	27656	FLENNBER, DON	KB4SA	KENNESAW	GA	JUD WHATLEY, W4NZJ
07/24/95	27657	MC CORVEY, CHARLES H SR	K34QMC	STOCKBRIDGE	GA	CHAPTER 49
07/25/95	27658	ALTMANN, MAX	DJ7RU	MUNCHEN	GERM.	A LEINEMANN, DL9AR
07/26/95	27659	LA SALLE, JAMES J	K3OV	BADEN	PA	
07/26/95	27660	BELL, HAROLD T	N4DPC	MILLEDGEVILLE	GA	WALT BRINK, W3WPY
07/26/95	27661	BISHOP, EDWIN T	K6OFM	SAN CLEMENTE	CA	WALT JOOS, W6EKM
07/26/95	27662	CARSON, HARRIET A	W3KZC	STROUDSBURG	PA	ERNEST TRANSUE, W3MDO
07/26/95	27663	SLAVSKY, STEPHEN N	N4EUK	RESTON	VA	
07/27/95	27664	BATES, CHARLES E	W6JX	WEST COVINA	CA	LEE EASTMAN, W6AWI
07/27/95	27665	EICHOLTZ, FREDERICK JR	WA3UIM	BROOMALL	PA	
07/27/95	27666	HAGERT, DALE A	NMØH	EAGAN	MN	
07/27/95	27667	BECKER, DONALD W	W5NAA	SAN ANTONIO	TX	L. J KOCUREK, JR, W5VIV
07/31/95	27668	MILLS, THOMAS E	KM4DY	LAWRENCEVILLE	GA	
07/31/95	27669	WRIGHT, DANIEL J	WA0JRD	LINCOLN	NE	
08/01/95	27670	DOENBOS, ALBERT H	W2TGQ	WHITESBORO	NY	JAMES CHASE, W2VGE
08/01/95	27671	GREEN, ROBERT MACE	KR4VF	GAINESVILLE	FL	GARY LILJEGREN, W0SH
08/01/95	27672	WYSONG, STEVEN E	AL7GI	TOLEDO	OH	ROBERT M TAYLOR, W8CBA
08/02/95	27673	FARMER, STUART	K7WF	LONGVIEW	WA	JOHN NELSON, W7AOB
08/03/95	27674	BOWLES, CHESTER	AA1EX	SHARON	NH	HAROLD CHASE, W1EES
08/03/95	27675	DUKE, W HENRY	AE4KH	CARROLLTON	GA	FRANKIE WOMACK, W4BJT
08/03/95	27676	FORCE, RICHARD C	WB1ASL	LANCASTER	NH	WES RANGLES, W4COW
08/03/95	27677	MINTZ, HOWARD L	WA1CFX	JAMAICA PLAIN	MA	B. RANGLES, W4GXZ
08/03/95	27678	PARKER, WALTER M	KA1ODT	WINDHAM	ME	WES RANGLES, W4COW
08/04/95	27679	CLARKE, THOMAS L	N1QNU	LOWELL	MA	B. RANGLES, W4GXZ
08/04/95	27680	LEDoux, PAUL R	WA1DPR	WESTPORT	MA	WES RANGLES, W4COW
08/04/95	27681	OHM, BILL	WA1TTE	ACTON	MA	B. RANGLES, W4GXZ
08/04/95	27682	PAPADEAS, GREGORY W	KA1O	NASHUA	NH	WES RANGLES, W4COW
08/04/95	27683	GRINNELL, CLIFFORD W	W7QJN	LYNNWOOD	WA	
08/04/95	27684	JEUKEN, ANTOINE	VE2GOO	ILE PERROT, QUE		TONY MERCADER, F3DM
08/04/95	27685	MANGUM, NORMAN W	K5AFO	LEXINGTON	MS	
08/04/95	27686	MORICE, ANTHONY R	AB7LR	AVE CREEK	AZ	GERRY HIGGINS, W9INP
08/07/95	27687	LYONS, RICHARD W	WØPQZ	PLATTEVILLE	CO	
08/07/95	27688	SUPPLEE, CLARENCE L	W5LDE	OKLAHOMA CITY	OK	NORMAN WILSON, W5FLO
08/07/95	27689	DEAN, CHARLES R	AC4QR	ENGLEWOOD	FL	R. BOOKWALTER, W4NWF
08/07/95	27690	GULER, GEORGE F	WØOIR	SUN CITY CENTER	FL	L WITKOWSKI, WA1EDR
08/08/95	27691	BROCHU, DANIEL G	KY1F	BOZRAH	CT	MILT CHAFFEE, W1EFW
08/08/95	27692	PFISTERER, GEORGE J JR	W3YJG	HUNTINGDON VAL.	PA	
08/09/95	27693	BENTLEY, EARNIE L	W4NAI	HARLEM	GA	D. R ANDERSON, K4PSW
08/09/95	27694	RITTER, PETER V	AC6KD	LOS ALAMITOS	CA	
08/09/95	27695	ROWLANDS, MICHAEL	VA3MR	OTTAWA	ON	WALT BRINK, W3WPY
08/10/95	27696	BRACEY, JAMES L	W5JEG	FORT WORTH	TX	
08/10/95	27697	CONDON, JAMES J	AD4YM	CROZET	VA	
08/10/95	27698	EDSON, GERALD	WAØKNW	BRANSON	MO	GARY HARRISON, WAØRWS
08/10/95	27699	GARRISON, KAREN	AA1AH	DURHAM	NH	
08/10/95	27700	STEINER, ALLEN W	NØTE	NEW STRAWN	KS	GARY HARRISON, WAØRWS
08/10/95	27701	WEBB, RAYMOND L	W4TKT	CUMMING	GA	
08/10/95	27702	WHEELER, BILL	KØDEW	LEBANON	MO	GARY HARRISON, WAØRWS
08/11/95	27703	MEADE, ERNEST F	KJ8E	MONAVILLE	WV	
08/11/95	27704	WRIGHT, FRANK S	KØ6MI	LODI	CA	
08/11/95	27705	LIVINGSTON, JOEL T	K4JMV	WILLISTON	SC	D. R ANDERSON, K4PSW
08/11/95	27706	BARRETT, STEWART P JR	WA4CWQ	AUGUSTA	GA	D. R ANDERSON, K4PSW
08/11/95	27707	GROTH, ROBERT J	WA2PRB	CORPUS CHRISTI	TX	

Ham Radio in Japan After V-J Day

by Julian Hirsch, W2KFB
53 Darling Ave.
New Rochelle, NY 10804

When I shipped out from San Francisco on July 29, 1945, bound for some (unknown to me) destination in the Pacific, resuming my ham activities was furthest from my mind. Two years of training for a Signal Corps radar assignment, via OCS and the Radar Schools at Harvard, M.I.T., and Fort Monmouth was about to bear fruit (I thought) and the only question was "What, and Where?"

We stopped for a day at Pearl Harbor to form a convoy, and found the headlines in the Honolulu papers carrying the big story - the A-bombing of Hiroshima. Sketchy as the information was, it was a hopeful sign. When the call came out of the squawk box of our Liberty ship for someone who could copy Morse code to volunteer to copy press dispatches for the ship's newspaper, I violated the army maxim of "never volunteer", and the result was spending a few hours a day in the ship's air-conditioned radio room doing what I most enjoyed while the rest of the "passengers" sweltered!

A few days later the report of the Nagasaki bomb made it obvious that the war was likely to end soon. This was confirmed when we anchored in Ulithi Lagoon, in the Caroline Islands, for several days. The surrender in Tokyo Bay occurred the day we landed in Batangas, Luzon, just 37 days after leaving the U.S.A.

After about 6 weeks in the Philippines (with the 16th Sig Opn Bn, serving 6th Army HQ), we set sail for Japan - a 15-day cruise on an LST. Landing at Wakayama, we proceeded to Kyoto, where I spent the next 3 months or so. Needless to say, there were no radar assignments, so I spent my duty time largely in the Teletype section, with an occasional visit to the radio shack. Off duty, there was plenty of time for sightseeing, which was enhanced by the fact that Kyoto and its surroundings were untouched by the war (though a bit run down and shabby).

In early March, 1946, I was transferred to the Tokyo vicinity to activate the 3rd Signal Radar Maintenance Unit, one of the very few radar assignments in Japan (actually, I never knew of any others). This assignment put me at a former Japanese airfield about 30 miles north of Tokyo, Johnson AAB, at Irumagawa. I was attached to a AAA Searchlight Battery, which was in turn attached to an aircraft plotting detachment. I spent the next several months plowing through the red tape of requisitioning the 3 vehicles, a huge amount of tools and test equipment, etc., most of which never arrived during my tenure there! I had a 4-man team, none of whom knew anything about radar, so most of my activity was as a teacher.

One day I wandered over to the Air Corps' portion of the field and spotted a gamma-matched 10-meter dipole on a short mast next to a Quonset hut identified as an AACS (Army Airways Communication System) facility. I discovered that a young AF sergeant (unlicensed) was operating a ham station (somewhat illegally!) from that site. He had a dozen or more BC-610 transmitters, a BC-339 (a CW transmitter capable of about 3 kW input), none of which was in use by the military, and Super Pro and SX-28 receivers. We struck a deal, whereby I would provide the license and he would handle the routine maintenance.

I went down to GHQ in Tokyo and was issued Japanese Amateur Radio License #23, with the call sign W2KFB/J2 (after having my FCC license forwarded to me from home). Incidentally, my sidekick Jim had been using J2AN for his earlier bootleg operation. The next several months were a ham's dream come true. My military duties were minimal, and the 10- and (by then) 20-meter bands were loaded with signals from all over Oceania, Asia, South America, and North America. I worked everything I could hear, including a handful of Europeans, being limited only by the ionosphere and my military duties. All our CW operation was by me (Jim didn't know the code well enough), and I generally used the BC-339 transmitter at about 3 kW input.

As the time approached to return to the U.S.A., I concentrated on working US stations, which came through very well. The biggest thrill of all came on the night before my return to the States when I raised a ham in New Rochelle on 20 meter phone (AM, in those pre-SSB days), who stayed on with me until my father could get to his shack. The 10- minute conversation with my father from Japan was an unforgettable thrill for both of us. Afterward, I closed the station and took the log with me when I shipped out the next morning. Incidentally, after my departure Jim apparently teamed up with another military ham and the station was licensed as J2AAP. I never heard from him again. W2KFB

JAPAN

JOHNSON A.A.B. ---- 27 MILES N.W. OF TOKYO

W2KFB

FIXED - PORTABLE J2

Radio.....Confirming our QSO Of.....194.....
At.....Item Time Ur.....MC Fone-CW Sigs RST.....
Xmtr:.....Watts Inp. Recvr:.....
Remarks.....
QSL TO: 18 Edgewood Pk. 73, JULIAN D. HIRSCH
New Rochelle, N.Y. W9JIP PRINT

1995 Fall Classic Radio Exchange

by Stu Stephens, K8SJ
749 E. Prospect St.
Girard, OH 44420

1995 Fall Classic Radio Exchange: September 24-25, 1900 UTC to 0400 UTC. The Classic Radio Exchange, "CX", is a celebration of the older commercial and homebrew equipment that was the pride of our ham shacks a few decades ago. Object is to restore, operate, and enjoy older equipment with like-minded hams. A Classic Radio is at least ten years old, an advantage but NOT required to operate CX. YOU CAN USE ANYTHING, although new gear is a distinct scoring liability and not as much fun!

Exchange your name, RST, QTH receiver and transmitter type (homebrew send final amp tube or transistor) and other interesting conversation. The same station may be worked with different equipment combinations on each band and each mode. CW call "CQ CX", phone call "CQ Classic Exchange". Nonparticipants may be worked for credit. Suggested frequencies: CW up 60 KHz from low band edges; phone 3880, 7290, 14280, 21380, 28320 and/or AM frequencies; Novice/Tech 20 KHz up low band edges. 7060 and 3560 CW tend to be the most popular CX frequencies.

Scoring:

Multiply total QSOs (all bands and modes) by following sum: (total number of different receivers and transmitters worked on each band and mode plus the total numbers of states/provinces/countries worked on each band and mode). Multiply that total by your Classic Multiplier: the total years old of all receivers and transmitters used, three QSOs minimum per unit to qualify. If equipment is a transceiver, multiply age by two. If homebrew, count as 25 years old unless actual construction date or design is older.

Certificates are awarded every now and then for the highest score, exotic equipment, the best excuse, and other unusual achievements. Send logs, comments, anecdotes, picture to: Jim Hanlon, W8KGI/5, P.O. Box 581, Sandia Park, NM 87047. Include SASE for next CX Newsletter.

Reference K9BSL Remarks in Summer Journal

Chapter 89, Palmetto State, was honored to have 'Ted' P. Ferguson, W4BQE, as a Charter Member. He was the FIRST to contact a QCWA member in each of the 50 states. The chapter scrapbook contains the NUMBER ONE certificate issued to Ted by National QCWA over the hand and seal of Harry S. Gartsman, W6ATC, a past national QCWA president and M.W. McRae, W9RC, a former operation activities manager.

Ted had a silent partner in his ham activities. His name was Woody, a toy manchester. He would stand watch in the hamshack and if anyone called W4BQE he would find Ted and bring him back to the shack. Today's generation of hams want to know if Woody copied A1 or A3!

Cecil A. Sills, W4HDO, Past President of Chapter 89, Palmetto State.

SILENT KEYS

With sadness we record the passing of these members.

K1DNC, John R. Sandersom, #22590, Whitinsville, Mass.
W1ORG, Maurice Lindquist, #18315, Plainville, Conn.
W1TIG, Walter B. Mills, #17790, Canton, Mass.
AG1W, Dudley D. Hardy, #14467, Stratham, N.H.
K2CTJ, Michael W. Begala, #15731, Fair Haven, N.J.
VE3AJP, J. Grant Curry, #02642, London, Ont.
W3FFO, Aubrey H. Stansberry, #04639, Cowen, W.Va.
VE3HP, Arthur F. Ferguson, #02643, Port Elgin, Ont.
W3TQ, Ward M. French, #14430, Carpinteria, Calif.
NK3W, Robert A. Hill, #23055, N. Linthicum, Md.
K4BKQ, Wyatt Davis, #22879, St. Petersburg, Fla.
W4CMT, Dewey T. Gardner, #08394, Columbia, S.C.
W4DH, Lester A. Pulley, #05395, Palm Harbor, Fla.
W4GFB, Richard D. Kirby, #21063, Stafford, Va.
W4GR, Clare A. Baker, #05446, Apopka, Fla.
W4JVU, Charles R. Sledge, #14129, Portsmouth, Va.
K4KAH, Walter E. Hattendorf, #09768, Jensen Beach, Fla.
AA4L, Robert A. Johnson, #12358, Calabash, N.C.
K4OL, Nat Burnett, #00043, Hallandale, Fla.
W4PAE, R.N. Miller, #01310, Santa Barbara, Calif.
W4SME, William R. Staples, #11850, Atlantic Beach, Fla.
W4SVB, O. Charles Chapman, #10553, Lakeland, Fla.
W5IQM, Jack Shelton, #12348, Baton Rouge, La.
K6QJP, Robert H. Utschig, #14960, La Jolla, Calif.
WB6SZD, Melvin H. Miller, #26370, Keno, Ore.
W6VH, James H. Brown, #05197, Los Angeles, Calif.
W7FNC, Ray D. Etherington, #03413, Tacoma, Wash.
W7HTY, Holland R. Day, #00634, Glendale, Ariz.
W7JZQ, Earl K. Moore, #01980, Comanche, Tex.
W7KF, William M. Kangas, #19361, Rawlins, Wyo.
W7LET, Donald G. Morrison, #25117, Peoria, Ariz.
KM7T, Michael G. Strahon, #13380, Eugene, Ore.
N7VVG, James W. Sherman, #26958, Rigby, Id.
KD7YF, John A. Miller, Sr., #20379, West Jordan, Ut.
WA8BKF, William E. Spilski, #20108, Detroit, Mich.
W8DKA, Lee M. Augustus, #04960, Ypsilanti, Mich.
W8DX, Richard J. Cotton, #07870, Detroit, Mich.
W8PH, Douglas H. Horner, #05520, Dayton, Ohio
W8QOM, Anna E. Strawway, #13079, West Branch, Mich.
W8WIT, John C. Rosenberger, #16919, Toledo, Ohio
W9BXP, Russell R. Williams, #09747, Seymour, Ind.
W9EIS, Eugene Dean, #23568, Sheffield, Ill.
W9KPC, Celeste Giarrante, #03918, Joliet, Ill.
KB0B, Clark F. Koffke, #09142, Grand Island, Neb.
W0EUL, Robert Begun, #17269, Aurora, Colo.
W0IWV, Arthur L. Roberston, #11929, La Junta, Colo.
WA0MTN, Joseph G. Tucker, #23145, Edina, Minn.
W0YZK, Ferris A. Kramer, #08493, Omaha, Neb.

Please Note:

Before we can publish SK information we need an obituary notice, funeral notice or a note from a family member. Please send all information to QCWA Headquarters.

Calls For Kids - A Club Project

Revitalize your chapter and help deserving kids!

by Richard (Berk) Berkemeyer, WØREP
402 Kingridge
Ballwin, MO 63011

Has your Chapter become nothing but a chowder and marching society, and not even much marching? Are members losing interest because there's nothing new happening? Are you looking for a project to revitalize the group? Let me describe what one club has been doing to pull itself together, and help a very worthy cause.

The Moolah Amateur Radio Club in St. Louis County, Missouri, has, for a number of years, been furnishing a unique service to the St. Louis Unit of the Shriners Hospital for Crippled Children. Since we are all Shriners, we fit in to the organization, but many children's hospitals have similar problems, and would welcome the same kind of service.

Many of the patients are undergoing extensive surgical correction and are inpatients for many days, weeks or months. They are often a long way from home and they are almost always homesick. Many are from financially disadvantaged families.

Every other Sunday afternoon, several of our members go to the hospital and activate a 2-meter station which we store there. We demonstrate ham radio to the kids by linking them, via 2-meter FM, to the home station of another member, where the link is patched into the telephone system. They can call their families, friends etc., at no charge. We have called as far as India, Turkey, and Belize. No, we aren't rich. A contact with one of the long distance companies resulted in them picking up the long distance tab. In return, we limit calls to five minutes, and as a result the monthly phone bill rarely exceeds \$20.

The kids really enjoy the chance to talk to friends and loved ones, and they are proud of their "Calls For Kids" certificate confirming the call via amateur radio which one of our members designed and we duplicate on a copier. Their parents and

friends appreciate the chance to support the patients, and the club members bask in the warmth of the thanks from both ends of the conversations.

There are some problems, very minor ones, but they do crop up once in a while. The younger kids (and some older ones, too) get mic fright and can say only one or two words at a time, and need to be encouraged to talk normally. Also, we learned to do the parent contact off the air. Believe it or not, a parent sometimes doesn't want to talk to the child. While this is VERY rare, it can be traumatic to the child involved. If this happens, the child is told that no one is home.

We do not use a repeater. We have found that we can operate simplex for considerable distances (we have a Ringo Ranger on the roof) and so we don't tie up a repeater for the hour or so we are in operation. The only expense was to obtain several phone patch units for the control operators, and to obtain the 2-meter transceiver. Almost every club has a member with a spare or older rig which will do the job, even an old crystal controlled rig will work very well. Build the antenna (another chapter project!)

So now you have a project which can involve all your members and result in some of the most heart warming experiences you have had in a long time. There is something for everyone, from getting the equipment together, designing a certificate to give the kids, public relations with the hospital and the long distance phone company, perhaps building a phone patch (still another chapter project?) and for all, the fun and satisfaction of working with kids and their families and educating a lot of people that real two-way radio is not CB!

If anyone would like more information please contact me at the above address. WØREP



NØIUO, NØDGF & NØSXA at the hospital operating position connecting a young patient to his home via two meters.

NO.	NAME	DAY	TIME	NET CTRL	FREQ
	QCWA CW	WED	2000E	VARIES	7035
	FLORIDA SSB	SAT	1300Z	W4NWF	3955
	QCWA SSB	SUN	2000Z	VARIES	14347
	FLORIDA SSB	WED	1500Z	W4NWF	7274
	NE REGIONAL	SUN	0845L	W2AUF	3917
1	CLEVELAND	WED	2000L	KB8ZBH	146.88
2	CHICAGO AREA	1TH	2130L	W9MOL	147.15
4	NORTHWEST	SUN	0830L	W7PN	3655
4	NORTHWEST	SUN	1200L	W7FNC	3952
4	NORTHWEST	SUN	1500L	K7FPT	3952
5	DELAWARE VALLEY	SUN	1000L	W2EEQ	3917
6	PITTSBURGH	SUN	0830L	W8CSU	147.03
7	SOUTHERN CALIF.	SUN	1000L	W6ZRZ	146.805
7	SOUTHERN CALIF.	SUN	1100L	K6BA	3695
8	UPPER MIDWEST	SAT	0800L	W0KHG	3877
9	SOUTHWEST OHIO	SUN	1330L	W8DWT	3987
10	MICHIGAN	SUN	0800L	VARIES	3903
11	NORTHERN CALIF.	SUN	0930L	WA6AFT	3907
11	NORTHERN CALIF.	SAT	1000L	WA6AFT	145.85
12	SOUTHEAST FL.	WED	2030L		146.76
14	SAN DIEGO	WED	2000L	K6QM	145.52
16	ARIZONA	SUN	0700L	W7ER	3890
17	ALLENTOWN-BETH.	SUN	1015L	K3GOX	3990
19	MISSOURI	WED	1930L	KD0IR	147.15
20	BALTIMORE	MON	2100L	WA4GHU	147.285
21	CANTON OHIO	THU	1930L	K8UDO	146.79
25	NEBRASKA	TUE	1930L	W0HXL	147.06
25	NEBRASKA	SAT	1430Z	W0EUT	3983.5
28	CENTRAL	SUN	1030L	VARIES	3917
30	WEST VIRGINIA	SUN	1500L	VARIES	3865
31	READING	MON	2100L		146.91
32	GATOR	SAT	0900L	VARIES	145.29
33	GUNDERSON	DLY	2000L	W3APE	3982
35	MIDCONTINENT	THU	0830L	W0WHK	146.97
36	NORTHWEST IND.	THU	2000L	N9MRS	147.495
37	HARRISBURG	WED	2100L	K3IUY	147.12
38	SAN ANTONIO	SUN	2030L	W5HRF	28650
41	DALLAS	SUN	0715L	VARIES	3835
44	HOOVER DAM	MON	2000L	W9RU	145.39
45	CITRUS	TUE	2330L	WB4DRF	147.195
46	FOUNDER'S	THU	2030L	W2AUF	147.36
46	FOUNDER'S	SUN	0930L	W2AUF	3917
48	TREASURE COAST	DLY	1500Z		7153
49	ATLANTA	WED	2000L	K4VN	145.41
49	ATLANTA	SAT	0900L	K4VN	3857
51	TEX-LA	MON	1900L		146.70
52	MISSISSIPPI	THU	2030L		147.225
54	TYLER	MON	1930L	W5RRM	28.650
54	TYLER	SUN	0800L	W5CNO	3835
55	WISCONSIN	SUN	0830L		3985
58	COLORADO	SUN	0930L	VARIES	146.07
58	COLORADO	SUN	0900L	W9KRE	3905
60	EAST TENNESSEE	SAT	0730L	AA4WX	7233.3
61	DETROIT METRO	SUN	0800L	W8IHx	3663
62	SUWANNEE	SAT	0900L	W4PFJ	3940
63	CENTRAL OK	THU	1900L	W5HXL	145.41
63	CENTRAL OK	SUN	0800L	VARIES	3856
64	EL PASO	SAT	0830L	VARIES	3933
65	NIAGARA FRONTIER	SUN	1330L	W2NW	3900
70	NATIONAL CAPITAL	THU	2000L		147.03
73	SOUTHERN ONT.	SUN	1300L	VE3MO	7088
73	SOUTHERN ONT.	SUN	0900L	VE3DAR	3773
75	CENTRAL CAL. COAST	SAT	0800L	VARIES	3917
76	BLUE RIDGE	SAT	1300L		7180
77	NORTHERN NJ	THU	2000L		147.285
77	NORTHERN NJ	SUN	1300L	W2OJW	3917
79	SUNFLOWER	WED	2100L	VARIES	146.82

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Project "COMO"

by Fred Johnson
6202 Hilltop Trail
Sachse, TX 75048

Very little has been written about the history of the Collins Radio Company's involvement with computers. In this article Fred Johnson, a Collins mechanical engineer, who was closely involved with Art Collins, provides his recollections of that period. Ed.

In the '60-'61 time frame, Arthur Collins was getting serious about digital computers as a Collins product line. He foresaw the immense capability that solid state devices made possible. This was the time when then-new individual canned transistors could be used to form simple flip flop and logic gate configurations. Arthur decided that computers then on the market did not have the attributes he foresaw as requirements. Candidate computers included IBM and CDC.

To design and build a computer in-house, having a desired architecture became a company priority.

The scope of this new corporate direction was to prove all-encompassing. It drew together Arthur's choice of engineers and managers to scope out the concurrent directions into the arts of software, logic circuit design, power systems strategies, manufacture and assembly processes, test systems and strategies - and on and on. Nothing the company had done up to this time was as all-pervasive in its effect on everyone in the company. New jobs were defined, personnel were reassigned, the geography supporting the Cedar Rapids, Newport Beach and Dallas plants shrunk due to frequent flights of the company aircraft among the regions.

An underlying driving factor was that it had become possible to assemble and interconnect thousands of transistors and associated passive components in a reasonably small space. Thus, sufficient logic operations could be performed to accomplish many of the then foreseen requirements. Computer memory of the time consisted of ferrite beads interwoven with fine wire drive and sense lines. The similarity to strung Indian beads was not lost on the memory builders. Before the memory bead concept was replaced, IBM had mechanized the stringing process. Such tooling made possible memories in the high K-byte range. Collins never attempted memory bead stringing, but the possibility was surely discussed. The early Collins computers used purchased memory units for "core".

Starting a new mechanical design concept is a vivid recollection for the individuals involved. Because tangible things are involved, mechanical design always gets attention out of proportion to its difficulty. It is possible for great strides to be made in logic concepts or test strategies with little perceived achievement. Building a new mechanical concept is not that way. The new things have tangible form. Everyone can see them and can critique them. Many outside the mechanical design arts want to be involved.

Arthur had always placed emphasis on conceptual planning. In the mechanical area this meant building models. He seemed to sense that even some great EE's had limited skills in visualizing how mechanical stuff involved itself in functional performance of electronics. Neutralizing, cross cou-

plings, grounding system architecture, servo system stability and a host of related things could be designed better if the size, shape and geometries of a system were modelled for all to see. Thus, a first act in a new program was to build a model. Model building had become de rigueur.

So, to kick off the design of the Collins computer, a first objective was to build a mechanical model. Many called it a "mock-up". Someone took the words computer and mock-up and named the project "Project COMO".

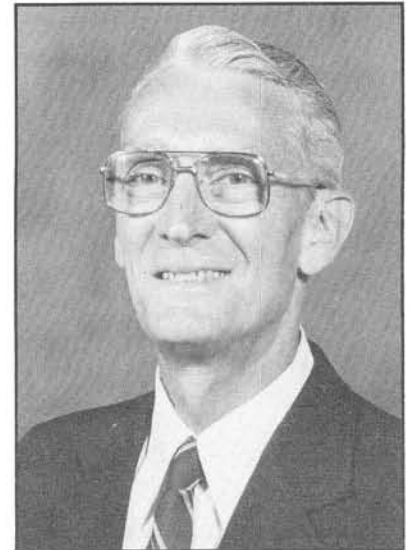
Because this project start-up was such a signal event, what follows will include some details, but little emphasis on chronology.

This author was aware of discussions of computers in the company's product line before Memorial Day, 1961. Because I was not directly involved with the advance planning, the subject of computers took second place to my assignments in HF, amateur, and broadcast communications products.

On Memorial Day morning, '61, I was therefore surprised to get word to be at LAX later that afternoon. This message reached me while I was at the site of a new home I was having built on a hill in Cedar Rapids. When I called back, John McElroy announced himself as "Old Homewrecker". He told me the company Beechcraft would take me from Cedar Rapids to Chicago. There I was to pick up a non-stop to Los Angeles.

Bob Cattoi had been in Newport Beach and was to drive up to LAX to pick me up. The assignment was "Arthur wants to start the design of a company built computer". My task was to get the mechanical model started.

Bob filled me in as much as he could about direction of the program. This was uncharted territory for me, perhaps less so for Bob. The Newport Beach facility was to be the site of the new computer design. The plant was brand new at the time. Its dedication occurred during the course of the COMO project. But, many engineers essential for the work were located in Cedar Rapids and Dallas. Arthur undoubtedly asso-



Fred Johnson

ciated the new computer program with a new facility, and the moves of personnel became a non-issue.

Several forces were at work affecting the mechanical design planning. Among them were these:

1. Arthur had engaged a team of outside industrial designers to come up with a new "corporate look" for all product designs in the future. This group introduced a new round company logo without the "wings" that had been part of the former logo. The Industrial Designers steered not only the shape of products but color, surface texture, knob configuration etc. We in the mechanical design function had to learn that visible screw heads are ugly. It was a new experience to look outside the company for direction in these areas.

2. Although transistors were small, and offered the advantages of compactness, they did generate heat. Worst of all, the manufacturing processes for transistors of the day produced devices whose reliability was seriously degraded by the internal heat. This situation required a defined sub-project to keep the active devices cool. We built upon prior experience, and used the help of airflow visualization and measurement techniques introduced to Collins by Dr. Alexander Lippisch, a compatriot of Werner Von Braun.

3. An early decision was made to construct the computer with small circuit cards about 2-1/2 inches square. These cards were partitioned to hold flip flops and other circuit elements. The cards were plugged into horizontal rows of connectors supported by air ducts that formed the card cage. The connectors accepted taper pin terminations at the rear for individually installed "scatter wires". The deliberately disorganized wiring reduced cross talk that would have resulted from organized cabling that was usual in that day. The horizontal ducts had holes aligned with every transistor location on the cards. Getting air flow directed and balanced for minimum overall blower requirements was an interesting and very successful endeavor.

The models were first laid out by drafting personnel brought in from the Newport engineering group. Metal parts were fabricated at local vendors and assembled in the project laboratory.

The project lab was a large open area in the new Newport Beach plant. Because the new computer mock-up was to be assembled there, drawing boards and a few desks were brought into the area. The room became the COMO room. The COMO identifier was also a priority label, as well as an answer to questions about personnel who had apparently disappeared from their normal assignments.

As the project grew rapidly, Harry Passman was also brought from Cedar Rapids to Newport Beach as additional project driver. Harry had the reputation for "full steam ahead". Arthur pulled all stops to hurry the project along.

Electrical engineering ranks around the company were also tapped for workers and leaders. Many moved at least temporarily to Newport Beach. Don Martin was a frequent participant, as were many others. A count of project participants in the summer of '61 would probably top 75.

The mock-up was completed in a frenzy toward the end of July. A date was established for Arthur to come and view the model. In addition to the features that could be readily seen, we had engineered many aspects that were not visible to the casual glance. We felt we had thought of everything.

To communicate our understanding of the problems, and the solutions, we had prepared a family of charts to be used in a presentation. They showed reliability study results, power

system architecture, and several related topics essential to a full understanding of what was there to be seen. Our plan was to present the information on the charts on a given morning. At one AM of the night before the presentation, the last touches on the model were completed.

It might be appropriate to mention here that the detachments from Cedar Rapids were accustomed to coming to work at 7:30 AM. Chief Engineer Bob Cox admonished the engineers from C.R. to show the engineers from Newport Beach what a day's work is. Over time it had become widely known that work schedules in Newport Beach were somewhat less rigorous than in C.R. Suffice it to say that the boarding party put in extra full days. We made up for coming in early by staying late.

An appointed day arrived for presentation to Arthur of the model and associated charts. We arrived in the COMO lab extra early to be sure nothing had been overlooked. When we arrived, we discovered that Arthur had already been there and was apparently satisfied with what he saw. There were a few moments when it appeared that the engineering charts we had prepared would not get the review we thought was essential. Somehow, our disappointment with this turn of events got to Arthur, and the presentation was rescheduled for later in the day.

Our charts gave us a chance to communicate what wasn't obvious, and to get some feedback to help with continuing the project toward production. The Industrial Design of the cabinet has turned out to be a timeless design which still looks good over 30 years later. Its features and color identify anything using the concept as a Collins product. It was subsequently applied to Avionics and all other company products.

The cooling system went on to demonstrate excellent reliability for the tens of thousands of components cooled.

A full scale development program followed COMO. It resulted in the C-8400 computer, used primarily for message switching purposes. An early customer was ARINC who subscribed to services of C-8400's located in Cedar Rapids. Thousand of phone line were brought in to the C-8400's in a special building having environmental and security control.

Further development of the cooling system encompassed air to water heat exchangers in the computer cabinets. The building air conditioning proved unable to handle the total heat load. There were many other firsts in the program.

A parallel development was a magnetic disk file memory of gigantic physical proportions. The file was built by Bryant Division of Excello Corp. they are makers of precision grinding machine spindles. The file was about 5 feet wide, 5 feet high and 4-1/2 feet deep. It contained up to 23 discs on a 6-inch diameter horizontal spindle, driven by a 5 horsepower motor. Each disc was 39 inches diameter, 1/4 inch thick magnesium, magnetically coated both sides, and with 8 flying read-write heads each side, moved radially by a pivoted, hydraulically actuated, shaft parallel to the spindle axis. The Bryant files were situated in the environmentally controlled computer room.

The Bryant files soon proved vulnerable to particulate matter in the air. Although the cabinet had closed panels, and a token through-flow air filter, random particles would initiate a head crash. This individual crash would splay particles throughout the cabinet and almost instantaneously avalanche into a massive crash of most, if not all, of the heads. Obviously not an acceptable situation.

When we looked closely at the file's characteristics, sev-

continued next page

eral things became apparent. The 5-horsepower motor drove the disc spindle via "Velos" belts. Chaff from these belts was an internal source of particulates. Further, the location of internally generated heat was substantially at the sheared boundary layer of air at the flying magnetic read-write heads. This is exactly where it could do the most damage by way of differential expansion of the critical parts.

While discussing with Arthur the principles involved, I made an intuitive observation that the internal air must be thoroughly mixed by the discs whirling at 1800 rpm. Wrong! At the time of my statement, Arthur merely responded with, "Is that really so?". Subsequent temperature measurement with fine wire thermocouples showed large gradients "everywhere". It was Arthur's question that again got to the fundamentals involved.

Upon understanding the situation, Arthur commissioned a small mechanical engineering team to make the Bryant cabinet fully sealed. In turn, this required an air-to-water heat exchanger to carry away heat generated by the 5-horsepower spindle motor.

We designed what became known as a "top hat" for the Bryant cabinet. This addition contained the heat exchanger and temperature controller, allowing complete sealing of the cabinet. We also sealed an internal area containing the drive belts. These actions proved successful. With exception of a special hydraulic oil problem, to be described later, the files went on to reasonable reliability in the Cedar Rapids computer center. It is interesting to recollect that the Bryant files were rated at about 25 M-byte.

C-8400 computers were first installed off premises at CNT in Toronto. This critical installation got lots of attention because it represented the company's externally visible entry into the computer business. The C-8400 had by this time proven its capabilities at the computer center in Cedar Rapids. But, in the process of utilizing state of art hardware, some changes made by the file manufacturer proved to have serious consequences.

How a seemingly innocent change caused serious consequences is the subject of the write-up: The Bryant File Problem.

The Bryant File Problem

Aside from many other development topics related to integration of the Bryant disc file into the embryonic C-8400 computer system, there is one problem which warrants recounting.

As has already been mentioned, the Bryant file had to be sealed against the entry of particulate matter. When the files in Cedar Rapids were sealed, they went on to successful performance. Thus, when the first off-site C-8400 system was installed, sealed Bryant files were part of the system.

It's interesting to recall that at that time, few mechanical engineers had heard the terms disc and file connected to mean what everyone now knows. Seeing the comparisons of file capacity and performance then vs. now is truly astonishing. There were few alternatives at the time, and Arthur had selected the Bryant unit for its combination of performance properties. From any standpoint, the Bryant unit was a marvel. Amazingly, it worked.

The C-8400 installation for CNT was brought up operationally with special attention from Collins engineers throughout the company. It was a high visibility program. Because all

of the hardware had been tested in Cedar Rapids, and elsewhere, the installation in Toronto should have been close to routine. This was not an initial trial. But.....

On a fateful afternoon for this author, the scenario was as follows: I was working in Cedar Rapids on HF communications developments when the call came from Arthur Collins to be in Dallas the next morning. Upon reporting in the next morning, Arthur presented a sketchy outline of what had already become known to many as the "Bryant disc file problem". I hadn't heard of it until then.

In a nutshell, the files at CNT Toronto were failing due to what appeared to be self-contamination of their hydraulic oil. The contamination produced a gummy substance which stuck values in the digital head positioning system. This, of course, wiped out the function of the entire file.

The installation team was already aware of the nature of the symptoms, and were trying to analyze the contaminants. A routine of frequent oil change was in place. But, the bits and pieces of an organized search and destroy mission were not yet coordinated.

Arthur culminated my introduction to the problem by saying "Why don't you look around today. Then, come back tonight and tell me what you think".

What I found was a general awareness of the problem. But, due to massive apparent complexities, no one had really developed a focussed approach to a solution. Looking back, an engineer can appreciate the bewilderment of the troops in the presence of such a perplexing "random" type of failure. Worse yet, the failures were occurring at increasing frequency.

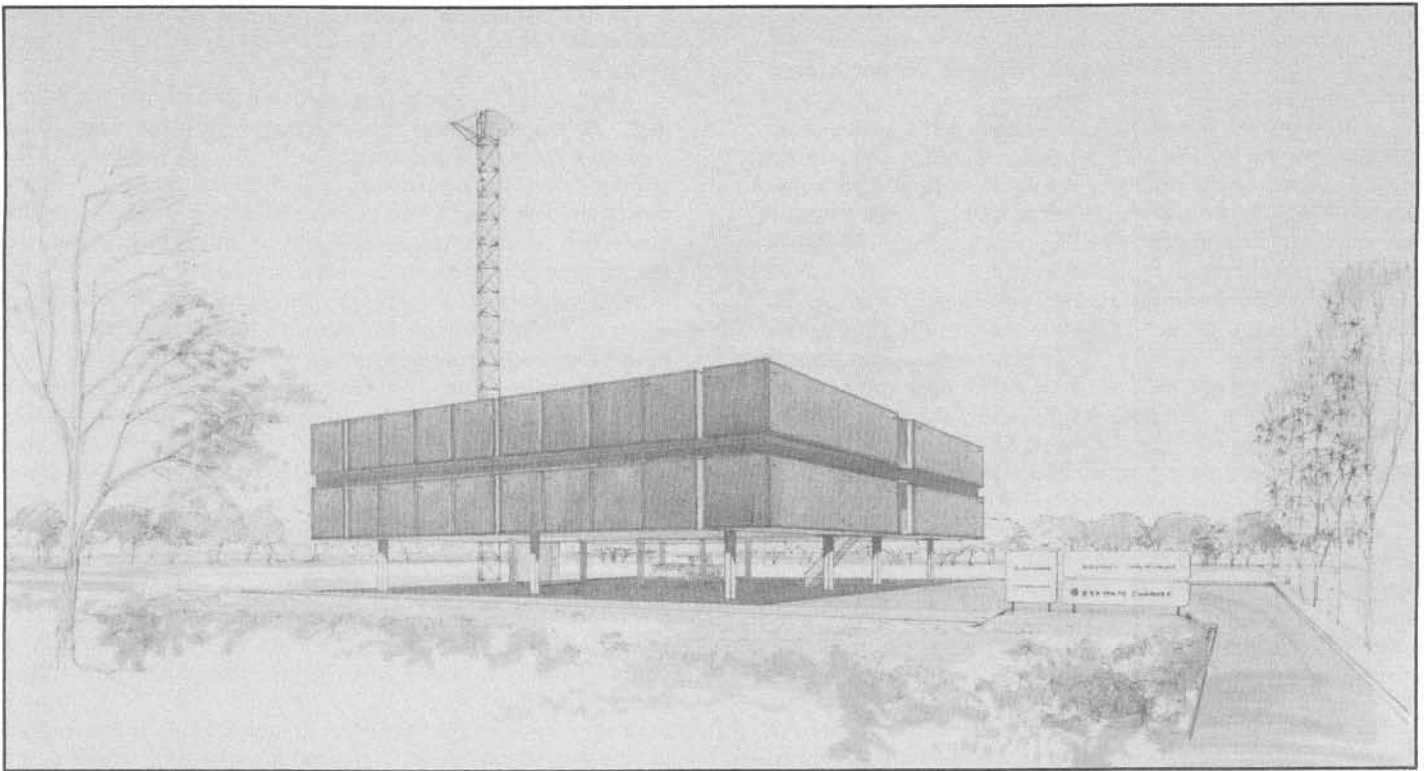
The CNT computer, being a significant installation, had Arthur's full attention. He saw this installation as a determinant of the company's success in entering the computer market.

When I reported back to Arthur's office at the close of business, I was very apprehensive. There was no good news. The thought of painting a realistic picture of the situation for Arthur was not pleasant to contemplate. The thought of it possibly being career-limiting was not far from the surface.

That evening Arthur was delayed by other business. It gave me time to sweat. When he was free he beckoned me to come in. His words were: "Well, what does it look like?" I recounted information I had found, and told him about the process I used to get up to speed. Arthur made only a couple of comments. I told him how I weighed the possibilities, and how it would take directed effort to gain understanding of the elements of the problem. I said something to the effect that I could not envision a "silver bullet".

About at this point, Arthur turned away in his swivel chair and stared from the fourth floor window across the company campus. To me it was an eternity of silence. I really listened for what was to come. I had concluded my report with no obvious solution to this vexing problem.

Presently, Arthur said: "Well, we might as well get something to eat". He knew I was not at my home location, and would not have anything else planned. We walked the length of the building #407 hallway to the elevators. We took the elevators down and got in his car -- in total silence. Arthur drove out on Alma and onto Arapaho, and to Central Expressway. Not a word. We drove down Central and over LBJ freeway to Preston Road. This was heavy silence. It appeared to me at that point we were heading for Pastory's, a restaurant Arthur liked. As we came to a stop on the service road at Preston, Arthur looked straight ahead, with hands at the 10 and 2



Arthur foresaw switching systems extended to big applications where a large modular container would be manufactured at the factory and shipped complete/operational to a site for switching for a city. All an extension of the interconnect "process".

o'clock position on the wheel. His first words since my report on the apparent situation were: "I can't understand how so many competent people could see so much evidence of trouble and not DO anything". This quote is burned in memory. The words are unforgettable for both their meaning and emphasis. I decided I was not terminated after all. The dinner was otherwise unremarkable.

The next day it became obvious I was to immediately become part of the team chartered to find and fix the problems. I helped organize the diagnostic efforts. These constituted a multipronged effort too comprehensive to relate here. Suffice it to say, we rooted back to the most basic principles of engineering, hydraulics, and mechanics embodied in the file, its hydraulic system, the oil, and all components that could be suspected as causes of the problem. We reviewed designs of similar hydraulic systems in Boeing and Douglas aircraft, as well as talking to other manufacturers.

At Arthur's suggestion, I commandeered a fenced-in area with lab tables on which failed components could be disassembled and examined. In the urgency for new information, I had helpers partially disassemble returned valve units for my or other's examination, as soon as the units were returned from Toronto. Each unit was left in its place on its table.

When Arthur first saw this work I got a chewing out. He said: "Do you mean to tell me you have taken these units apart, and have not tagged and identified each component?" These are the most valuable parts this company owns -- they contain the seeds of our troubles! I had done exactly what he said. Later I called this another indelible learning experience. At the time, it was naked embarrassment.

Continuing diagnostics brought us eventually to the realization that, as usual, there was not just one problem. While we

were learning what will be described, the team was shipping fresh oil to Toronto via company aircraft, and doing as much analysis of the returned bad oil samples as was possible.

What ultimately turned out to be the whole problem was a combination of things. New design 6-foot long hydraulic hoses, from the pump unit to the Bryant file cabinet, had been introduced with the files at the CNT installation. The hoses were different from those tested in Cedar Rapids. The new hoses were plastic-lined with a non-conductive dielectric lining. The flowing oil in these hoses was generating extremely high triboelectric voltages. Upon discharge within the system, the arcs broke down components of the oil which turned into varnish that collected in the servo valve mechanisms. Further, these breakdown products were acidic, and reacted with various metals in the system. The design was vulnerable because oil contacted brass, steel, aluminum, cast iron, copper, zinc and cadmium. Our contacts in the aircraft industry said this was certain trouble. A monometallic system should have been the design objective. Because aircraft hydraulic systems are designed with the monometallic objective, they didn't have much history of trouble of this kind to relate.

It became apparent we were working with a subject almost no one knew anything about in a practical sense. The discharge of high voltages in dielectric oil was news to most who learned of it. To tie down the theory and prove we had a viable explanation of what was going on, we did two things to be certain that the internal discharge theory was correct.

First, to prove the high voltages could be produced, we built a small-scale system which pumped freon from an insulated conducting nozzle to a lab tray a little over one square foot. The stream from the nozzle arced in space and splashed into the pan of fluid. An electrometer was connected to the

— continued next page

nozzle. It showed that thousands of volts potential could be built up almost instantaneously. This was a small low pressure fish tank type of pump and 1/8 inch diameter plastic tubing.

Having proved this principal, we then built a transparent housing for the oil filter in the full-size system. For several reasons we wanted to observe flow in the system. This was an easy way to do it. Sure enough, while watching in a darkened environment, we saw the "lightning" discharges in the fluid. A smoking gun at last.

With this foundation to go on, I set about getting conductive hoses constructed at a reputable vendor in Michigan. With design data from Bryant, I arranged for replacement hoses to be fabricated for the CNT installation. The hose company was fairly close to Detroit, and I sweet-talked them into driving the new hoses across the border at Detroit where the company plane would pick them up and take them to Toronto. All this to simplify customs formalities.

All the details of the hose swap-out worked well. The hoses arrived in Toronto and were installed immediately. I felt a momentary sense of triumph over the obstacles we had swept out of the way. The new hoses were operational and the system was back and running OK in a very short time.

That sense of accomplishment was destined to be short lived, however. Arthur was never more than a few hours behind every detail of what was being done. He heard about the new hoses being installed. When he came to see me shortly thereafter, the system had been running OK for a time. But the data that would confirm there was to be no further trouble was not yet sufficient to be convincing. The most promising news was that there were no contraindications. Arthur's words to me were: "Do you realize that you have installed an unproven component into this most important system, and a Collins quality representative hasn't even looked at it?" Holy cow! Another of those character building experiences. Being caught dead to rights by Arthur leaves its mark.

Fortunately, the homework was correct and sufficient – as history developed and proved. The hoses were a dominant part of the problem. Additional work on the oil and change intervals continued. Some of the other components were improved along the way.

A sidelight involves a conference call between Arthur and a group of the computer team in Cedar Rapids, and this author and a PhD EE in Dallas. The call was on a Saturday morning. The gist of the conversation was me trying rather unsuccessfully to explain to the PhD the principles of triboelectric voltage generation in the oil. At the Cedar Rapids end of the line there were some silent guffaws I heard about later. Apparently there was a humorous aspect to this scenario.

Computer Production

After the basic C-8400 computer family hardware was designed and released to production, its variants and application-specific constructions were assigned to the newly formed computer department engineers. What remained of the ad hoc (Green Room) focus group, involved with originating the concepts, was dispersed to their original assignments in product line organizations such as avionics, HF communications, microelectronics, amateur products, etc.

As this part of the COMO cadre returned to previous work, the nucleus of the new computer department was permanently organized. Their ranks were fleshed out to a full engineering

function by additional transfers from within, and new hires. These were the personnel that carried the C-8400 into production.

A further pervasive change Arthur injected into the whole organization was a new concentration on the process of design and build of the company's full line of products. Ultimately, a division was formed and chartered to define, document, and implement the end-to-end process of conception, modelling, manufacturing and test of all product. This was the Process Division.

The emphasis on "process", was inaugurated in another event of signal proportions. An eclectic group of about two dozen engineers from around the company were summoned on short notice – like tomorrow morning – to a meeting Arthur called in Dallas. The subject of the meeting was not well defined in the "invitation" to attend. Thus, little preparation was possible. We all just showed up. I wondered, as did Dave Weber, with whom I travelled, what we would learn the next day. Neither of us had a clue.

We arrived at the meeting room in Dallas to find a room full of other invitees who also had short notice. In retrospect, it is interesting to reflect on the heterogeneous mixture of backgrounds and capabilities represented in the participants. It could hardly have been a more diverse group from all levels of the organization.

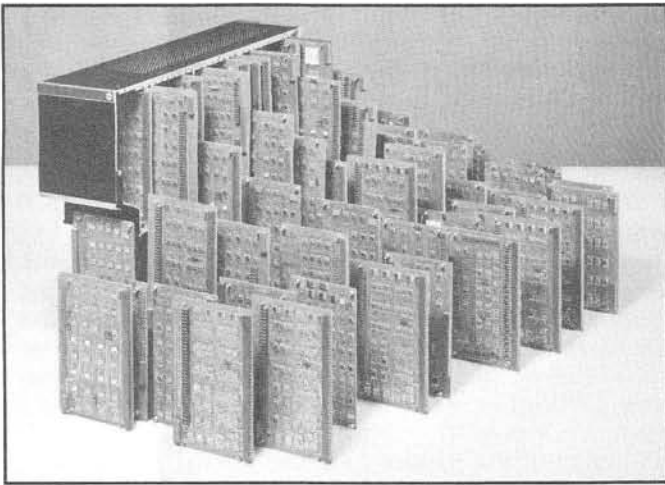
The meeting started with Arthur standing at the blackboard at one end of the room. He made a thoroughly constructed and comprehensive presentation of what "our business will look like in the future - starting right now". He foresaw the opportunities of commonality of construction techniques using planar technologies for interconnect, and modularized computer-aided design and manufacturing for all products of the future. Arthur had invited this group to share this vision, to understand it, and to embrace and apply it.

There were at least two central issues that ran through his presentation. There was very limited participation by the invitees.

1. Digital computers were foreseen to handle all the design and manufacturing data - ultimately in central data bases. Machines and instructions to people building the equipment would all be digitized. Test and scheduling would be included. The tools to do it are in hand, or could soon be if we take a leadership role.

2. Electronic components were rapidly being integrated on silicon, reducing size, increasing performance, reducing cost, and improving reliability. Arthur recognized the impact this would have on the industry, and wanted us to lead in this revolution.

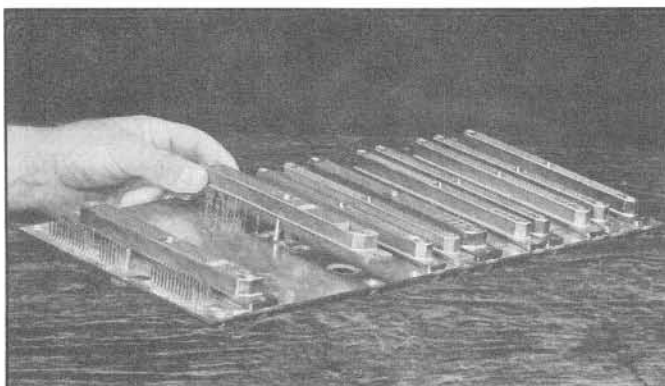
Arthur used many illustrations and examples to share his views. He held up his hands, palms parallel, as he said that future electronics would be organized as: "A layer of components adjacent to several layers of planar interconnect". At the time, there was not even a consensus in industry that plated through holes were a viable concept. This was in the days of 6.3 volt filament voltages. For that matter, circuit boards were relatively new. They were primitive in both design and manufacture. Components specifically designed for planar board mounting had not yet become readily available, so conventional radial leaded resistors and capacitors were used with canned transistors. Single-circuit layer boards were in use, and two-circuit layer boards employed eyelets for through-connects and component leads. Connectors to interconnect planes, and interface them to the world, were yet to be developed and applied in a structured interconnect system.



This photo shows the density of packaging possible in this modular interconnect system. "Blue-line" connectors on cards - any length or parallel mount. This is from the C-8500 computer, the first big use of this scheme.

Arthur told the group that the plans of interconnect could be digitally defined for conductor paths on the board rather than the "tape-up" artwork scheme in use at the time. He pointed out that the same circuit design information would then contain data essential to manufacturing, and could tie in with product test and other n/c machines in manufacturing. Numerical control machines were also relatively new, and industry was learning how to best apply them.

The concept of a planar interconnect location being an "address" for what was to be done at those grid coordinates was discussed. All fabrication and assembly operations could be related to these coordinates, as could test circuit operations. IC's were on the horizon. Their multi-leaded requirements fit neatly into the digital design scheme. The Newport Beach MOS works had been started, and the other regions had design staffs who would be customers sending in digitized designs "over the wire". Sylvania came on the market with IC's having multiple flat radial leads geared for what has now become "Surface Mount". This Sylvania design ultimately got lost in the ensuing rush to apply "Dual In-line" packages with through-hole lead mounting. DIP's went on to become an industry standard. Before long, Arthur saw the trend and ordered that our next generation products would use the Sylvania "SUHL's", as they were called, because they maximized use of the interconnect planes by not requiring through holes for the leads. Look



Backplane with thin-line connectors for boxes.

what has happened in "surface mount".

Hybrid microcircuit shops had been started in Newport Beach, Dallas and Cedar Rapids. This was in preparation for a large step of process implementation that Arthur was describing in exquisite detail. Hybrids were just another application of the basic interconnect principles Arthur saw as integral to everything we were doing. Multilayer circuit board manufacturing capability was also being developed in Newport Beach, Dallas and Cedar Rapids. Arthur sensed the lack of coordination in these many efforts, and was trying to explain how they were all part of a bigger pattern. Again, remember that most products were then being hand wired in individually designed configurations of cabling and discrete wiring. EE's and ME's had had the freedom to optimize their design for what they decided was the best combination of function, ruggedness, use of space etc. The ME's were heavily involved with making things small, rugged, cool and reliable.

EE's put the emphasis on signal to noise ratio, sensitivity, stability, power output, distortion, and the like. As innovative as this operation had been in the past, Arthur's message was clear. It was time to get all this organized and digitized. . . soon!

During the all-day meeting, I noticed that Harry Passman and I were the only ones taking notes on key topics. I wondered why the more senior and higher level participants weren't making notes. I thought, "Am I wrong to be doing this?" Harry and I compared notes later with surprisingly good correlation on what we thought to be the meat of the presentation.

Sober reflection convinces me that the invited participants were inundated with so many advanced concepts they were overwhelmed. I certainly was. This was the group that would have to implement any of the new concepts. The job looked so formidable at the time that no one rose to the occasion. It was obvious that some of the objectives were a long way off, and this group knew of Arthur's desire for fast progress.

In this setting we can now look back at some of Arthur's visions of things that are still coming to pass. He described digital product test as a logical extension of the circuit design process - rather than a separate function. He cited the need for new powering schemes, and new standardized voltages for the upcoming family of active devices. The concept of digitized design data for planar circuit construction was a recurrent theme. Arthur tried several times with little success to involve members of the audience in the discussion to get a feeling of comprehension. The audience was not very responsive.

The meeting reconvened the next day. It was a continuation of the original format. The main thrust of the audience response had been "Yes, but. . . ." This must have been annoying to Arthur. He had made a special invitation to these participants, and the response was, "Yes. . .but".

The group went to the Rafter's Club for lunch the second day. Shortly after food orders were taken, Arthur mentioned feeling ill, and excused himself. That dissolved the meeting. The central thrust had been lost. Participants disbanded and, to my knowledge, no summary of the proceedings was ever published. Harry Passman's and my notes are gone. So, this is now recorded only in memory of those involved. I've oftentimes wondered if this response made Arthur sick.

Harry Passman and I continued to take notes in meetings with Arthur. Others did little note taking, or did it rarely. Now that history has unfolded, it is clear how valuable it would be to have those notes, with quotes and paraphrases, so we could

continued next page

put Arthur's projections in the context of evolving history in the industry. Even now, 30 years later, there are announcements of "new" things and concepts that Arthur viewed clearly in those earlier days.

A very significant impact on how Collins design and manufacturing business was affected was the formation of the Process Division. Harry Passman was assigned to head the division. Many excellent mechanical engineers were selected from other divisions and steered to make the digital design process a reality. The division grew to a sizeable staff. There were many things to "processize". The concept of a multilayer planar interconnect system was a first priority. The idea was to lay out circuits on an x-y grid and digitally define the entire interconnection pattern. Ultimately, this was to be tied to logic design, simulation, test generation, and the like. Clearly, this would simplify overall effort. A design implemented this way could be manufactured and tested at any of the locations having compatible machines and tools. Design portability!, easy update!

Multilayer boards were the backbone interconnect scheme. We invented and tooled modular connectors, allowing parallel and perpendicular joining of boards and backplanes. The concepts were forerunners of what's on the market today. We called them Blueline (for boards), and Thinline (for boxes) connector families. Extra large backplanes were envisioned to connect a full floor-standing cabinet of plug-in units. We tooled to build backplanes 2-ft. by 6-ft., but never built any larger than about 2-ft. by 2-ft.

The modular scheme of interconnecting circuits spread to all other company product via "White Books". These books contained engineering instructions prepared by the Process Division on how to design and document a product using the "process". This was a giant step toward ensuring that designs "fit the factory". Mechanical designs of racking and cabinet construction were also standardized, with the result that the company product line had sufficient visual product identification so a Collins product could be recognized from across a room.

Along the way, we got a large precision glass grid engine-ruled with .025 grid spaces. This was duplicated on Mylar and used by circuit designers for their circuit layouts. A few of the draftsmen involved became very adept at circuit layout and its digital input to the data base. We converted a digital inspection machine to make one of industry's first circuit "digitizers". An operator moved a stylus to the location of a desired interconnection among layers, and "clicked" at that location. The coordinates were "sucked" onto perfect coordinate dimensions for use in subsequent photo and drilling/milling operations. Punched cards were used initially, later paper tape, and ultimately "on-line" and magnetic tape media.

It was an exercise to convert everyone to rectilinear circuit thinking who had been accustomed to making direct circuit paths with tape-ups. Using the published design rules allowed fast turnaround in the board shops. It helped convince the uninitiated that the "process way" would speed product development. Thruput speed helped convert die-hards who had trouble giving up the "freedom" to route circuitry every which way. The process provided predetermined spacing limits and used "square corners" for conductor layouts.

The process division also geared up the factory with the new machines and process tools required. Many interesting special designs were pursued. For example, a computer-controlled conveyor to pick up and move from tank to tank the

large panels of circuit boards through their copper and solder plating processes. Special high-speed drills were installed for the circuit board holes. Photo-resist application and development facilities had to be implemented. It was a busy time.

COMO 66

The computer development program continued through the evolution of integrated circuits. As plans were made to build the next generation computer based on IC's, another mockup program was initiated. It again involved a select task force brought to an isolated location to build the concept model. The locale was a separate building in Cedar Rapids. The season was in the dead of an arctic-like winter. The program was named COMO 66. More follows on this last exercise of its kind.

This second of its kind team had a better idea of what it was about than the first group in Newport Beach 5 years earlier. Software development, logic design, test, powering systems, memory technology, all had advanced rapidly. The interconnect and process aspects had also advanced. It was time to put this all together in a new generation of computer - the C-8500 family. All engineering disciplines were again represented in the "Green Room" team. Objectives were spec'ed out, and, of course, there would be a model built.

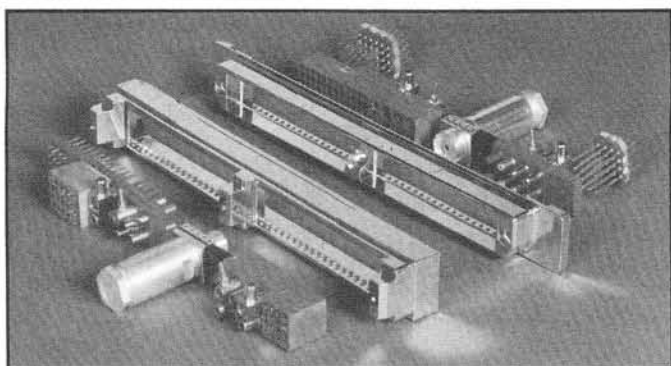
Among the tough mechanical tasks was detail design of connectors for not just computer needs, but for high voltage, high current, coax, high density connections - all in any combination in a structure capable of supporting the rear of any plug-in company product. This modularity and function have now been tooled by connector suppliers to the market. At the time it was a unique capability for the Collins products. The C-8500 was to represent construction concepts for all products to come later.

Styling concepts, originated in '61, were carried forward to a new family of cabinets that featured shelf-mounted plug-in boxes interconnected by backplanes and connectors at the rear. The "process" construction features were applied to avionics "ATR" packaging standards, long in use for avionics products. A modular family of styled floor-standing cabinets was also prepared for digitized input to a process factory. Thus, virtually every Collins product could be constructed and interconnected using the process standards and associated manufacturing processes. All of this was documented in loose leaf user information guidelines known as "White Books", maintained under release and revision control. Again, these are the roots of designs which "fit the factory".

The COMO 66 model was completed, and again there was a day of display scheduled for Mr. Collins. The model was a floor-standing cabinet with front and rear doors. True to form, when we arrived before 7 AM to check everything one last time, Arthur had already been there. There was one piece of instructive evidence he had left. It takes a little describing.

We modelled a large backplane into which two levels of shelves for plug-in equipments were provided. We had tried to include an example of every conceivable element of design flexibility available to a designer using these design concepts. Coax connections, high voltage, etc.

Now, Arthur had been adamant about using the planar interconnect system for every possible use. Special attention was paid to transmission line impedance, cross talk, and current carrying capability. We illustrated in the model how every connector interfaced with other cards, boxes or backplane. And



This is called the thin-line connector system developed as part of the COMO-66 Green Room. Modular, small signal, high current, power coax, signal coax, filter pins. Connector carries structure load at back of box and mounts to multilayer backplane. The term 'backplane' came about synchronously with this development. Photo shows tooled production parts in 1969.

we installed individual contacts on a couple of wires to show how temporary connection could be made to any of the rear pins on the backplane. We found these wires jerked off the pins, which had been bent by the force of pulling off the wires. The wires were lying on the floor below, a mute but powerful message.

It took a few minutes to realize that these "random" wires represented a lack of process discipline - in which the wiring would always be correct and embedded in the board. There were to be NO "white wires! !"

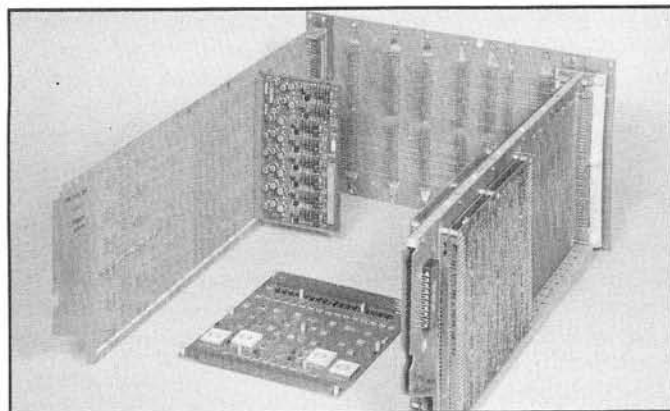
Other than that, the model was approved, and the hard work of detail design for all the new concepts began. Essentially all of the mechanical design was carried out in the process division. The corresponding software, logic design, powering system development, etc., was done in the computer department.

Finding what was required for real "no break" power was another subject along the way. Before it was over, it was decided that batteries were, after all, the most reliable power source. The company had gone through the process of getting power from two major regional power grids for a motor-generator source for the computers. This wasn't adequate. We then got three super large diesel generators with engines the size of a locomotive. These too were not really "no-break". They were started whenever there was a thundercloud anywhere near. When that too wasn't adequate, one was run continuously to power the computers - which really were on the batteries.

How to structure a proper architecture of fuse protection for the computers gives another insight into Arthur's concepts of reliability. In answer to a question one time, Arthur held up his hands about a foot apart and said, "Look, I don't want the fuse to blow until the flames are this high!!" We had huge bus bars carrying primary power. They were protected against intrusion of any foreign object. They were NOT fused!!

The computer cabinets for the C-8500 were provided with optional air-to-water heat exchangers to carry away internal heat without loading existing air conditioning systems. This would allow Collins products to be installed where competitors might run into a limitation. Another early recognition!! It also protected against airborne contamination.

Due to shortcomings of the Bryant file, Arthur commissioned design of a proprietary advanced technology Collins



This photo shows representative structural/electrical connections to use backplanes rather than wires.

disc file. The design was carried out in the Dallas area and the objectives included: high data capacity, faster access time, much reduced size, no hydraulics. All of these exceeded the specs of anything on the market.

What evolved was a multidisc unit about the size of a small microwave oven. The read-write heads were positioned by a voice coil linear drive, suspended on a rolling band support system. It was essentially free of backlash and friction, and for the day a very advanced concept.

Along the way, a large effort was made to develop and implement what was known as DPI testing. This was Digital Pseudorandom Inspection. It was to apply to IC's, boards or boxes - any logic circuit. Arthur saw the monumental efforts required to design conventional tests for all the inner workings of integrated circuits. He came up with the pseudorandom scheme which amounted to a self-programming test. Oversimplified, it was a clever way of applying an initial set of inputs to a known good device, then taking the corresponding outputs and jiffying them to become the next input. In this way all "good" devices, initiated this same way, would arrive at a given output pattern after an arbitrary number of cycles. The cost of test programming would have been eliminated. The scheme worked. Its problem proved to be that mathematical proof of its accuracy and precision was not forthcoming from any source that attempted that proof. Without it the scheme withered.

Because there are so many devices to test, and so many possibilities for a logic glitch, the DPI test effort was paralleled by mechanical designs of facilities to test IC's, boards, and boxes, at high and low limits of temperature. We designed a liquid freon cooler and heater to feed an IC conveyor test station. On one pass through the tester, the IC would be tested at both high and low temperature - in addition to room ambient. The same principle was applied to a platen for use at the MOS works in Newport Beach. This was to test each die on the wafer before it was diced, thus avoiding the expense of needless packaging of bad die. We started a design for conveyorized board test as well. But the weight of the program exceeded resources, so this design was brought only to proof of principle.

The C-8500 program continued. Many of its components were brought to fruition. In the end, when Rockwell became involved, the program lost its support, and emphasis turned to other programs. EJ

The book lists address and phone numbers for sources of high-pass filters, common-mode filters, band-reject filters, and interference resistant telephones, as well as an extensive list of manufacturers of home electronic equipment.

Page one of the new FCC interference handbook says "many interference problems are the direct result of poor equipment installation. Cost-cutting manufacturing techniques, such as insufficient shielding or inadequate filtering, may also cause your equipment to react to a nearby radio transmitter. This is not the fault of the transmitter and little can be done to the transmitter to correct the problem. If a correction cannot be made at the transmitter, actions must be taken to stop your equipment from reacting to the transmitter."

New Subject

Lew McCoy's message in the Summer Journal included a statement "Be sure to read our filing elsewhere in these pages". But the filing did not appear because of space constraints. Here is that filing now.

In the Matter of:

Amendment of Part 97 of the Commission's Rules to Eliminate Certain One-Way Communications in the Amateur Radio Service Medium and High Frequency Bands. RM No. 8626

To The Commission:

Comments of the Quarter Century Wireless Association:

The Quarter Century Wireless Association (QCWA), composed of more than 10,000 members, each with a minimum of 25 years licensed experience, arguably represents the most experienced group of licensed radio amateurs. At a recent meeting of its Board of Directors, the QCWA voted unanimously to oppose the petition of W5YI. This petition, RM-8626, proposes FCC Rules changes which, if implemented, would eliminate one-way transmission of code practice and information bulletins below 30 MHz.

W5YI states that the basis for his petition is the alleged ongoing abuse of current rules governing one-way transmissions in the amateur service, the interference they generate, and the alleged lack of need for this type of operations below 30 MHz. In our opinion, these allegations constitute an unwarranted condemnation of all bulletin and code practice activities below 30 MHz. The effect of such action, if taken, is aptly described using a currently popular phrase "throwing the baby out with the bath water".

Abuses of the Current System

We admit that certain amateur stations abuse the existing Rules, primarily because they fail to listen on a frequency to determine whether it is clear, before transmitting, thereby generating interference to any station which may then be using that frequency. With the growing number of radio amateurs, the medium and high frequency amateur bands are becoming more crowded. Therefore, pre-emptive operation by any station, whether engaged in one-way or two-way transmission, can be and is a problem. Eliminating one-way transmissions below 30 MHz is certainly not the answer.

The requirement to determine that a frequency is not in use before transmitting is routinely abused by great numbers of stations, by calling CQ without first inquiring if the frequency is in use, and by stations which "tune up" on a frequency, often for long periods, without first listening, and without identification.

The Commission has recognized the need for the specific types of one-way transmission which the petitioner proposes to eliminate, and has set forth, in Section 97.113(b) of the

current rules, certain criteria for such one-way transmissions, implying that they apply particularly to telegraphy practice and/or information bulletin transmissions. It is our experience that many self-styled information bulletin transmissions fail to meet these criteria.

The need for information bulletins in the amateur service.

Almost since the inception of amateur radio there has been a recognized need for stations that could promptly dispense timely information. The American Radio Relay League (ARRL), another nonprofit organization of and for radio amateurs, long ago established a Club Station, W1AW, which has a prearranged schedule to disseminate, on a daily basis, bulletins containing FCC releases, general interest bulletins on topics of interest to radio amateurs, and code practice. Any radio amateur can become informed on happenings in amateur radio, and it has become, in effect, the "New York Times" of ham radio.

Today more than ever, the service provided by W1AW has become a necessity rather than a convenience. For example, proposed Commission actions - of which the current Petition is a good example - have a typical period of 30 to 45 days for receipt of comments. There is insufficient time for these notices to appear in print media such as QST or CQ, prior to the deadline; and not all or even a majority of amateurs subscribe to quicker-reaction newsletters such as W5YI's Report, or the ARRL Letter. Often an ARRL Bulletin is the only timely means of disseminating such information.

Time and again, over the years, W1AW has proved its value in time of national crisis or domestic emergency, when amateur radio provided the primary means of communication. W1AW provided the coordination and guidance necessary to conduct such operations in an orderly and efficient manner.

Every member, and we emphasize "Every Member" of QCWA has had occasion to use W1AW, and hopes to continue to do so.

Summary

The subject petition is commendable in focusing attention on abuse of the privileges now allowed in the rules, for one-way transmissions. However, in view of the fact that the proposed Rules changes would also curtail activities and services such as those provided by W1AW, the Quarter Century Wireless Association recommends rejection of the petition. W4ZC



I ROLLED MY CAR ON THE WAY OVER HERE-- IS THERE ANY KIND OF WARRANTY ON THIS?

QUARTER CENTURY WIRELESS ASSOCIATION, INC.

159 East 16th Ave., Eugene, OR 97401-4017

503-683-0987

Fax - 503-683-4181



This form for use by all U.S. applicants
for membership in QCWA.
Effective 6/1/95

For Office Use Only

Membership No. _____

Date _____

First Licensed, Year _____

Deposit Record _____

Have you been previously enrolled in QCWA? _____

I, _____, _____
(Please Print Name Clearly) Present Callsign _____

having been licensed as an amateur 25 or more years ago and presently holding the call listed above (it is not necessary to have been licensed the entire 25 years) hereby apply for membership in QCWA. I understand that proof of the original date of licensing is required. My complete mailing address is:

Street Address _____ City _____ State _____ Zip _____
I will keep QCWA Headquarters advised of changes in my address and/or callsign. My first amateur license was issued _____ Other calls held _____
I wish to become affiliated with QCWA Chapter _____
Date of birth _____ Birthplace _____
Present occupation/business _____
If retired, what was major life work? _____
Other organizations you belong to _____

Your signature _____

SCHEDULE OF MEMBERSHIP FEES

Select one of the following plans

	Members	Family	
QCWA dues for a one-year period	\$15		_____
QCWA dues for a two-year period	\$25		_____
QCWA dues for a three-year period	\$35	\$12	_____
QCWA life membership	\$300	\$90	_____
Payable in 3 equal installments			
of \$105 each, in a one-year period	\$315	\$105	_____
		(3 payments of \$35)	_____

Initial registration fee, all new members - \$3

Gold membership pins are available, your call engraved, no year tags. Check type of fastener.

Tie tack _____, Screw button _____, Safety pin _____, ----- \$10 each _____

Year tag pins - 25, 30, 35, 40, 45, 50, 55, 60, 65, 70 or 75 (tie-tac only) - \$15 each _____

Total _____

Proposed by _____, **Callsign** _____, **No.** _____

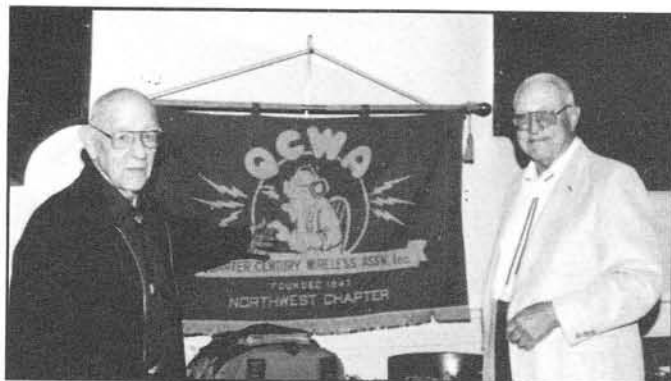
Members in the News



As guest of honor to the 9th Personal Radio Congress held at International Telecommunications Union (ITU), Place des Nations, Geneva, Switzerland, May 18-22, 1995 with representatives from 32 countries in attendance (some 300 people), Dr. Pekka J. Tarjanne, Secretary General of ITU presented Al Gross (W8PAL) with honorary permanent membership to ITU and a special medallion to commemorate recognition for pioneering and contributions to mobile personal wireless telecommunications in use world-wide.



Left to right: Leo Meyerson, WØGFQ; Don Daughy, W6EEN and Jack Troster, W6ISQ. Jack had just presented Leo with a plaque of pictures of Leo's radio equipment from years ago.



Chairman of Chapter 4, Thomas R. Gettleman, W9IZO, (right) with Sec./Treas. Harold W. Johnston, W7PN.

Chairman Thomas R. Gettleman, W9IZO. Tom's interest in amateur radio began in 1930 when he was thirteen years old. His cousin, Louis Wollaeger, W7ANA, lived next door in Milwaukee and taught Tom how to solder, build radio equipment, and operate a station. Tom got his license in 1932 and was assigned his present call W9IZO. At that time one could have a second call and he was assigned W9JOX for his Pewaukee Lake summer home. After several years the law was changed and he had to surrender his W9JOX call.

Tom's first equipment included a breadboard transmitter and SW3 receiver (a great set in those days). He picked up his advanced license in 1946 and is now on the air one hundred percent on phone nearly every weekday on the 75-, 20-, and 2-meter bands.

Tom has been an ARRL member since 1930 (that's 65 years) and joined QCWA in 1972 (No. 7486). He also belongs to the Sno-King Repeater Group, the Old Timers Club (No. 2498), and the Society of Wireless Operations (SWOP).

Secretary/Treasurer Harold W. Johnston, W7PN. Harold (Curley) was born in St. Helens, California, in 1906. At age fifteen, as a Boy Scout, he learned the Morse code and began tinkering with wireless transmission. In February 1923, Curley obtained his first license and upgraded his experimental equipment to UV300 tube and a "five-watt bottle" (whatever that is?). In those days, Curley indicated, there were three classes of amateur calls: X for experimental use, Z for special service, and "regular calls."

Curley went commercial in 1924 and served as operator for three years on the SS Humbolt and other ships plying the West Coast and the Orient. He then returned to Oakland and was married to the girl next door.

Radio, both commercial and amateur, was the constant of Curley's career. His work involved stints with a radio in British Columbia, Mackay Radio in California, the Lighthouse Division of the U.S. Department of Commerce, and various commercial radio facilities in Idaho and Arizona. Curley's various calls included 7QJ, 6CGL, W7DXF, and his present W7PN.

Curley says he has seen a lot of changes in radio communications from the "slop-jar rectifiers and sparks" to the present-day state-of-the-art equipment. However, he is still telegraphing - check in with him on the QCWA Chapter 4 CW net, Sundays, 1630 UTC, 3655 kHz.

Frank Piskur, K7FP

James Brown, W6VH, Silent Key

Reprinted from the Los Angeles Times

James Brown; Former Judge, Councilman

by Myrna Oliver, Times Staff Writer

James Harvey Brown, retired Los Angeles municipal judge and former Los Angeles city councilman who helped develop Dodger Stadium and Los Angeles International Airport, has died. He was 89.

Brown died Monday of heart failure at Glendale Adventist Hospital, said his daughter, Dorothy O'Leary.

First named to the City Council to fill a vacancy in 1959 when Ernest E. Debs was elected to the Los Angeles county Board of Supervisors, Brown won reelection and represented the 13th district, covering the Hollywood area, for five years.

In 1964, Gov. Edmund G. (Pat) Brown Sr., appointed him to the lower court bench, where he served until his retirement 10 years ago.

A conservative Democrat, Brown ran unsuccessfully for seats in the Assembly and House of Representatives.

Before he earned his degree from Southwestern University School of Law, Brown was a radio engineer. Just out of high school, he went to sea as a chief wireless operator and later worked as a disc jockey at radio stations KFOX and KGER.

He earned a degree in engineering from UCLA and worked as chief engineer at KFAC and KFVD. In 1937, Brown became master control supervisor for NBC.

During World War II, he was a Navy lieutenant assigned to airborne radar design, working at MIT and other research laboratories.

After earning his law degree, Brown served as president and attorney for the National Assn. of Broadcast Employees and Technicians.

Brown was one of the first amateur ham radio operators licensed in Long Beach, a charter member of Pacific Pioneer Broadcasters, president of the Society of Wireless Pioneers and a member of Radio Club of America.

He was a charter member of the Shrine Club in Long Beach and a member of the Peace Officers Shrine Club and Queen of Angels Clinic and Research Foundation.

In addition to his daughter, Brown is survived by his wife, Margaret; his son, retired Lt. Col. James Harvey Brown, Jr.; two sisters, Blanche Tibbot and Betty Dykstra, 10 grandchildren and 12 great-grandchildren.

The Services were held Saturday, July 15, 1995 at the Church of the Reconciliation, Forest Lawn Memorial Park, Glendale.

The family has asked that any memorial donations be made to the Shriners Children's Hospital.

Special Station Announcement

October 21 Former POW Camp Special Event Station Concordia, Kansas

The Kansas-Nebraska Amateur Radio Club will operate Special Event Station WØIND, to commemorate the 50th Anniversary of the closing of the German prisoners of war camp near Concordia.

The station will be in operation October 21, 1995, 1400 UTC to 2000 UTC, from the Airport Park in Concordia, during the POW camp celebration in Concordia.

WØIND will operate in the lower 25 kHz of the general phone portions of 80, 75, 40, 20 and 15 meters along with packet on 145.01 MHz.

For a beautiful QSL Certificate, send QSL and large SASE to: Kansas-Nebraska, c/o Arlan R. Campbell, WØNBT, Rt.3, Box 20-A, Concordia, Kansas 66901.

Troy Boucek, KBØHGB, Special Projects Chairman

Chapter 143, North Colorado, Introduces Novel Life Membership

North Colorado QCWA Chapter 143 has initiated a novel life membership plan, which is reported to have been enthusiastically accepted by members.

The plan, devised by newly-elected Chapter President Jim Fahnestock-WØOA, seeks to normalize the cost of a life membership relative to the age of the applying member. It has long been a problem that elderly members, with relatively few years "to go," pay the same as younger members who have years (often decades!) of membership ahead of them, and yet they pay the same life membership price.

The cost of a life membership in Chapter 143 is computed using the following formula:

Life Membership Dues = 80 - Member Age.

In other words, a 50-year old applicant pays 80 - 50 = \$30, while a 75-year old applicant pays only 80 - 75 = \$5.

The plan is still under evaluation, and subject to cancellation if complications arise, but it seems to be working. Most of the chapter's members have opted to become life members according to the plan.

There are a few "amendments" to the plan. One more-mature-than-most candidate jokingly said, "I'm 84. The Chapter owes me four bucks!" A stipulation was added that the result of subtracting age from 80 must be a positive number.

After several years of use, the chapter bank balance has remained essentially constant. At the time the plan was adopted, it was agreed by the members that any shortfall would be met by one-time contributions or other fund-raising activities. So far neither has been necessary.

Connie Fahnestock, WØOOP, Treasurer

MESSAGE: Searching For Uncle of boy born October 15, 1960 at Swedish Hospital in Seattle, Washington, searching for younger brother of birth mother. You were a Ham Radio enthusiast and worked for your step-grandfather in his garage. You would now be 55 or 56 years old and from the greater Seattle/Ballard area. In 1960 you were 5'10" tall, slim with black wavy hair and light skin coloring. You also had a younger step-sister who was 17 years old in 1960. Your mother was 4'11" tall and had black hair and brown eyes. If you have any information please contact L. Roberts, 1755 Robson St., Apt. 592, Vancouver, BC V6G 3B7 Canada. (604) 623-2129

Member Classifieds

WANTED: Service manuals for: Stancor ST-202A 10-80 meter AM xmtr; Hallicrafters SX-28A rcvr, dial cord stringing instructions for band switch, list of vendors who sell TM and military manuals. Roger Tavella, K1BHY, 444 Moose Hill Rd., Monroe, CT 06468.

WANTED: WW II German military radios, clandestine sets all periodes, SSTR-1 etc. For display only. Does not need to work. Will pay shipping or pick up. Cash or swap. Why? Rag Otterstad, LA5HE/OZ8RO, Hosterkobvej 10 .DK-3460 Birkerød, Denmark. Tel:++45-4281 5205, FAX ++ 45-4468 1514. E-mail: danmec*inet.uni-c.dk

WANTED: Older Collins radio equipment & accessories, any sort of Collins promotional item or literature. Signal magazines, coil cover, xtal calibrator, kilocycle dial, F455BO8 mech filter for 75A3; retired vibroplex, speed-X or McElroy bug; EV-611 Mercury microphone. Brian Roberts, K9VKY, 3068 Evergreen Rd., Pittsburgh, PA 15237. (412) 931-4646

WANTED: Manual & schematic for RF 675 antenna coupler manufactured by RF Communications Inc., Rochester, NY. Bill Mills, KC5PF, 16523 Tonys Ct., Amissville, VA 22002. (504) 937-4090

WANTED: Correspondence with ex-Navy, Merchant-Marine communicators; seeking clean late Hallicrafters units - FPM-200; SX-117/HT-44/45; HT-32B/33B; SX-88/122; Hal units - ARQ-1000A/B; ST-6R/6000R. Doug Hensley, WJ5J, 5678 College Dr., Baton Rouge, LA 70806.

WANTED: Assembly manual for Heath HW-9 low power CW xcvr. Howard Myers, W7ILW, 833 E. Pine Knoll Dr., Prescott, AZ 86303. (520) 445-6061

WANTED: ICOM SM-5 mic. Paul Wiegert, K2JFE, 625 Van Duzer St., Staten Island, NY 10304-2084.

WANTED: ARRL book "Understanding Amateur Radio"; meter for Ranger II. J.R. Berry, Jr., K8UGL, 2707 Vanderberg Rd., Columbus, OH 43204.

WANTED: Hallicrafters SX-88, SX-73, SX-9; Johnson "Navigator"; PRO-310; collins KWM-380; RCA AR-77; Racal RX; National NC-400. Steve Barnes, K6PFW, 848 N. Silverwood, Upland, CA 91786. (909) 985-1062

WANTED: Instruction manuals (or copies) for tube testers - Hickok 3638 &/or Precision #612; will buy either tester. Bill McGrannahan, KØORB, 4826 Jarboe, Kansas City, MO 64112-1335. (816) 561-0730, FAX (816) 753-7100

FOR SALE: Bound QST's 1941-1946, make offer. **WANTED/TRADE:** HQ-180A/C. Fred, WA2VJL, POB 1382, San Benito, TX 78586. FAX (210) 399-0806

FOR SALE: Simpson model 303 vacuum tube voltmeter-ohmmeter, including probes & operators manual w/schematics, like new. Leonard C. Silvern, K6RXU, Box 2085, Sedona, AZ 86339-2085. (520) 282-3009

FOR SALE: Reconditioned KWM-2A - \$550. **WANTED:** Schematic for Tempo Commercial Line 146A 2-meter xcvr; manual for HP Standing Wave Indicator model 4158. Claude Stewart, KD5DL, POB 181, Duncan, OK 73534.

WANTED: Copy of instructions for Unique Wire Tuner. David Hays, KØKD, 5225 Ridgeway Dr., Great Bend, KS 67530.

FOR SALE: QST magazine in binders, 1929 to 1992 complete; unbound complete years 1923-1925 & 1993 to date; scattered issues 1920-1922. Make offer. Al, W2WW, (516) 585-4694.

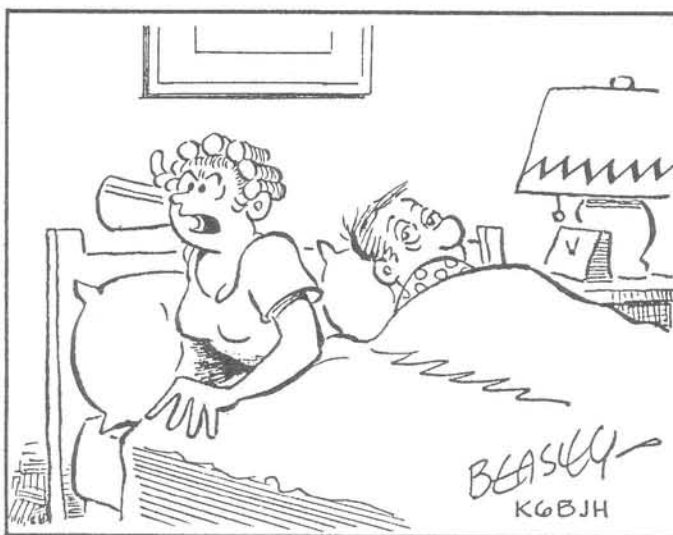
FOR SALE: Collectors: Hammarlund HQ-215, manual, working order and looks good. Wayne Cooper, AG4R, 1113 Beverley Dr., Alexandria, VA 22302. (703) 671-5629

TRADE: Astounding stories, February 1930 (vol 1, no. 2) for Kenwood TS-120S, other offers considered. Paul Gerbracht, W3QPP, 2114 W. 29th St., Erie, PA 16508. (814) 868-5519

FOR SALE: Collectors: old QST's '27, '28 & '29 (odd issues) fair to good condx - \$3 ea; Bill Orr, W6SAI Handbooks, hardbound, good condx, '56, '74, '78 & '81 - \$10 ea; NC-188 w/manual, spare tubes - \$65 + UPS; Swan 600R rcvr (covers 3.4-4.4, 6.7 to 7.7, 13.8 to 14.8, 20.9 to 21.9 range plus all 28 Mc band), covers most MARS and CAP freqs, like new - \$250; Swan 600-T xmtr, freq coverage as above, like new - \$250, both w/manuals - \$495 for the pair. All + UPS. Andy Clark, W4IYT, 41 Lenape Dr., Miami Springs, FL 33166. (305) 888-3874

WANTED: Back issues of Electric Radio and 6 and 2M AM gear. Scott, K6PYP, 210 Mantua Rd., Pacific Palisades, CA 90272. (310) 459-0337

WANTED: ARRL Handbooks, 1st edition, 5th, 14th, 19th & 20th, in good condx. WA7IHN, POB 442, Aumsville, OR 97325. (503) 749-1149



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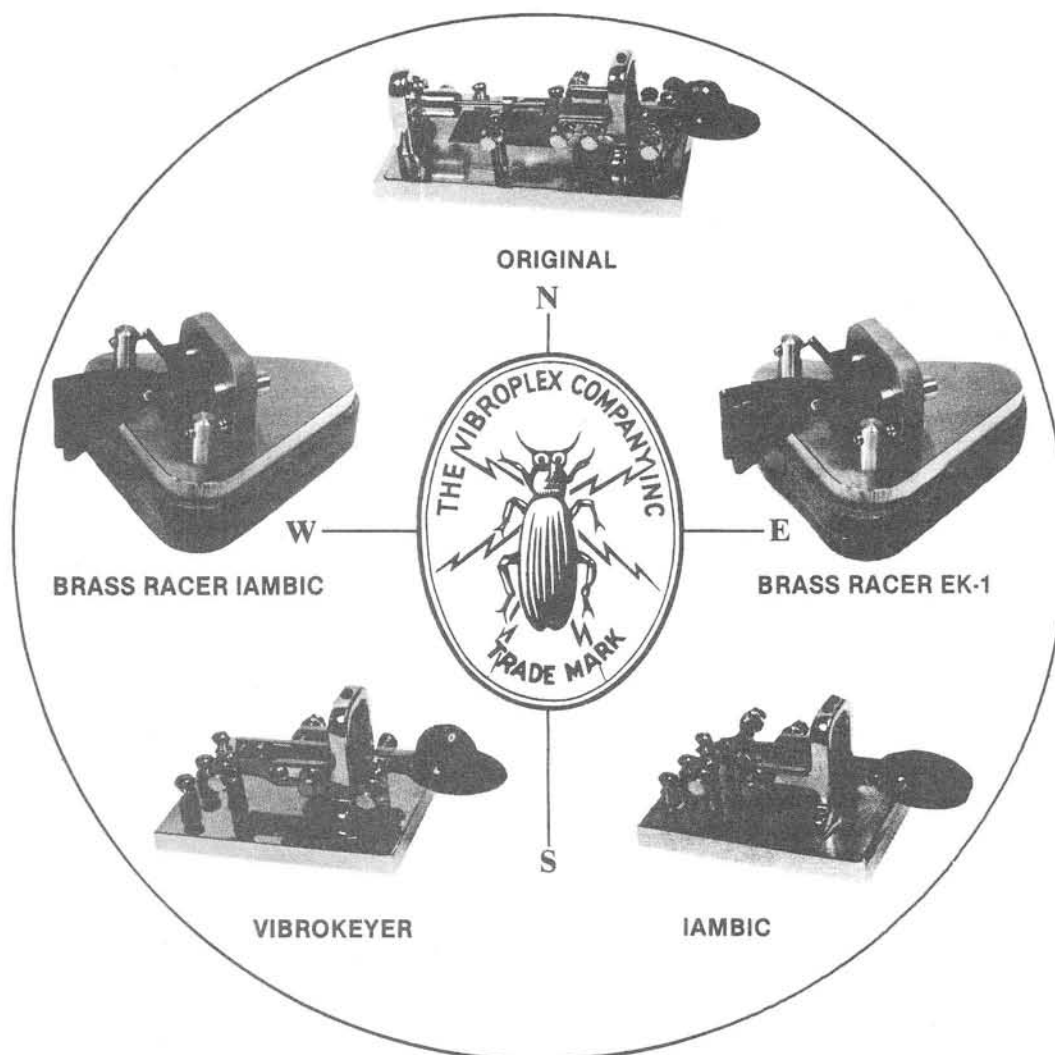
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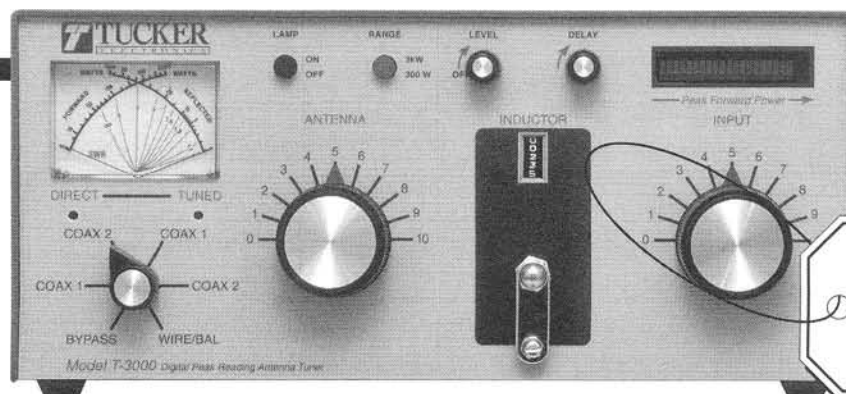


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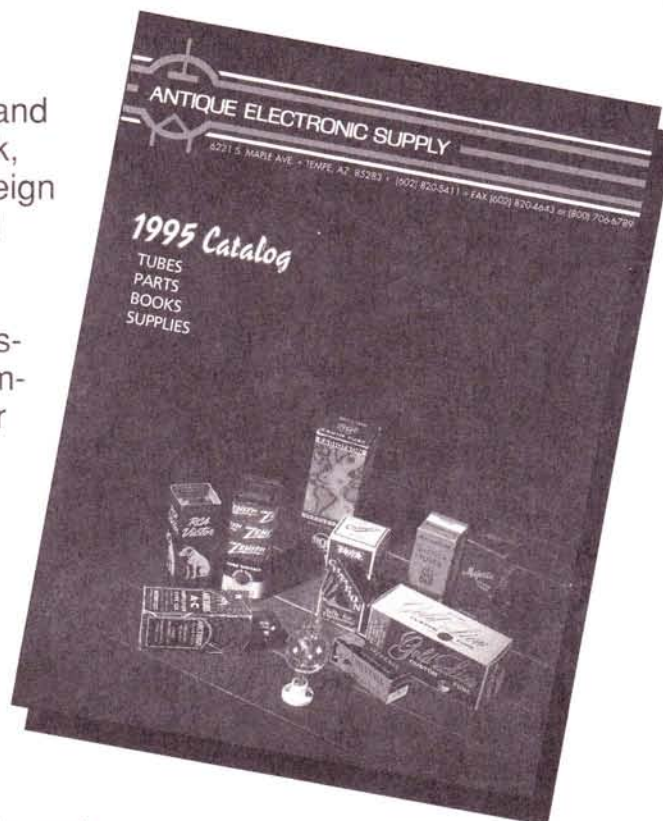
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EDSP
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All-Mode HF Transceiver FT-1000MP



The year was 1956. Electronic communication throughout the world was on the threshold of significant and remarkable change. Intrigued by the development of single-sideband radio theory, a young engineer and amateur radio experimenter painstakingly assembled an SSB transmitter. Word of his successful efforts spread quickly among his friends, and soon radio amateurs from all over the country were requesting transmitters just like it. Thus was born the first invention of JA1MP founder of Yaesu. Though his key is now silent, in tribute to his leadership and exceptional contributions to the radio art, the FT-1000MP carries the memory of his call sign.

An HF Masterpiece, Combining the Best of Digital and RF design technology. The FT-1000MP.



Specifications

- EDSP (Enhanced Digital Signal Processing)
- Shuttle-jog Rapid Tuning Enhancement
- Directional Tuning Scale for CW/Digital mode and clarifier offset display
- Dual In-Band Receive w/ Separate S-Meters
- Selectable Antenna Jacks
- Collins SSB Mechanical Filter built-in, 500 Hz CW Collins filter plug-in, optional
- Selectable Cascaded Crystal and Mechanical IF Filtering (2nd and 3rd IF Filters)
- User-programmable Tuning Steps w/0.625 Hz High Resolution Low-Noise DDS Circuit
- Custom Feature Set-up via New Menu System
- Adjustable TX Output Power: 5-100W (5-25W AM)
- True Base Station: Both 100-117 or 200-234± VAC 10%, 50/60 Hz and 13.5 VDC Power Inputs

Blending digital and RF technology, the FT-1000MP features a Yaesu exclusive: Enhanced Digital Signal Processing (EDSP). Beginning on the receive side with Yaesu's industry-standard high-intercept front end design, the RF signal is then fed to the IF stages, where an impressive array of 8.2 MHz and 455 kHz IF filters (including a built-in Collins SSB Mechanical Filter) establish the tight shape factor so important in obtaining high dynamic range and low noise figure. Finally, the EDSP system provides specially-designed filter selections and response contours for maximum intelligence recovery.

Only with this combination of EDSP, independently selectable 8.2 MHz and 455 kHz IF filters, and a low-noise DDS local oscillator system can receiver performance without compromise be obtained. You can customize your FT-1000MP by choosing from 20 kHz, 500 Hz, and 250 Hz optional, cascaded IF filters, then zero in on weak signals using Yaesu's exclusive Shuttle-jog Rapid Tuning Enhancement and high-resolution (0.625 Hz) DDS VFO. Without question, the FT-1000MP is the most technologically advanced HF rig today.

EDSP operates in both transmit and receive modes. On receive, the EDSP produces enhanced signal-to-noise ratio and significantly improved intelligence recovery during difficult situations involving noise and/or interference. The result of hundreds of hours of laboratory and real-world experimentation, EDSP's 4 preset random noise reduction protocols and 4 digital filtering selections are controlled by easy-to-use concentric controls on the front panel of the transceiver. High, low, and mid-range cuts for voice work are teamed with razor-sharp CW bandpass filters and an automatic notch filter which identifies and attenuates undesired carriers or heterodynes. Also operational in the transmit mode, EDSP provides 4 performance-enhancement pattern selections for different operating circumstances, ensuring best readability of your signal on the other end of the path.

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